NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha motorcycles have a basic understanding of the mechanical concepts and procedures inherent in motorcycle repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

Escorts Ltd. is continually striving to improve all models manufactured. Modifications and significant changes in specifications or procedures will be forwarded to all authorized dealers and will, where applicable, appear in future editions of this manual.

ESCORTS LTD. MSD
SERVICE DEPARTMENT

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

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

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

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

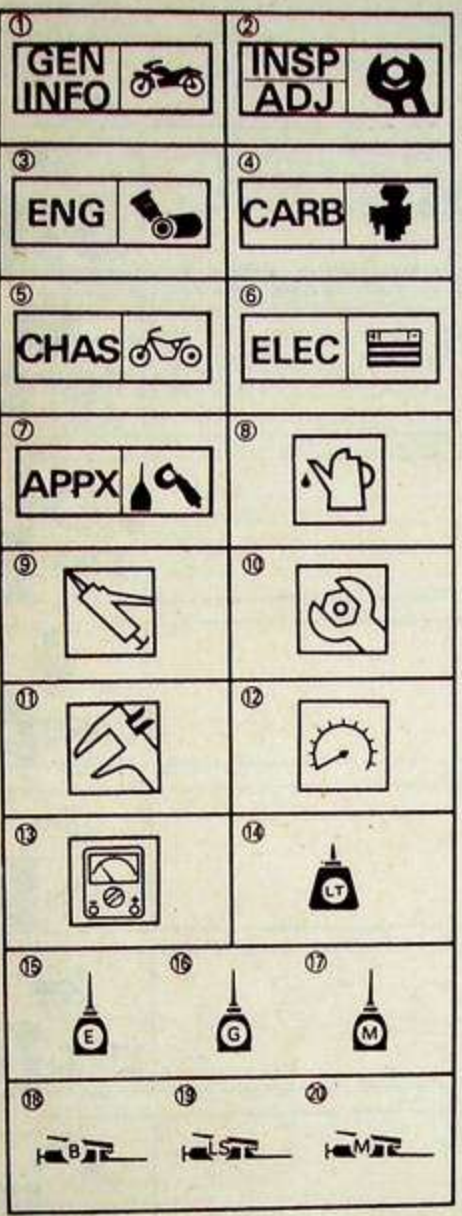
MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection operations.
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings
  Pitting/Damage → Replace.

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.



ILLUSTRATED SYMBOLS
(Refer to the illustration)

Illustrated symbols ① to ⑦ are designed as thumb tabs to indicate the chapter's number and content.

① General information
② Periodic inspection and adjustment
③ Engine
④ Carburetion
⑤ Chassis
⑥ Electrical
⑦ Appendices

Illustrated symbols ⑧ to ⑬ are used to identify the specifications appearing in the text.

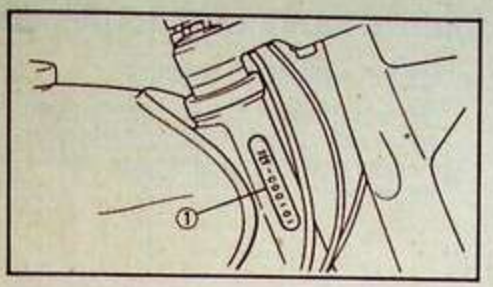
⑧ Filling fluid
⑨ Lubricant
⑩ Tightening
⑪ Wear limit, clearance
⑫ Engine speed
⑬ Ω, V, A

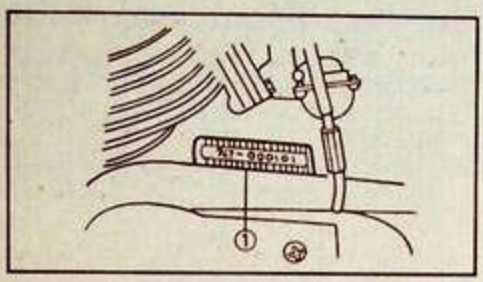
Illustrated symbols ⑭ to ⑳ in the exploded diagram indicate grade of lubricant and location of lubrication point.

⑭ Apply locking agent (LOCTITE; or equivalent)
⑮ Apply engine oil
⑯ Apply gear oil
⑰ Apply molybdenum disulfide oil
⑱ Apply wheel bearing grease
⑲ Apply lightweight lithium soap base grease
⑳ Apply molybdenum disulfide grease

INDEX

CHAPTER 1
GENERAL INFORMATION





GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

FRAME SERIAL NUMBER

The frame serial number (1) is stamped into the right side of the steering head pipe.

ENGINE SERIAL NUMBER

The engine serial number (1) is stamped into the left side of the engine.

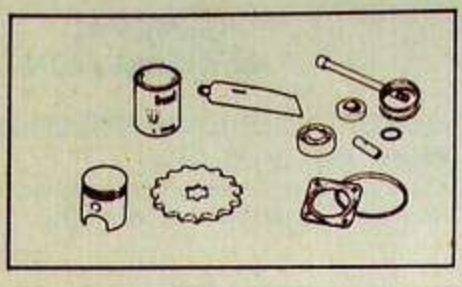
NOTE:

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.

Starting Serial Number:	
RX100	1L1-000101

NOTE:

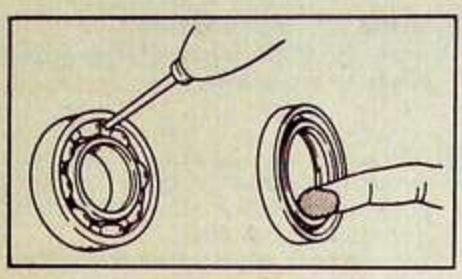
Designs and specifications are subject to change without notice.



IMPORTANT INFORMATION

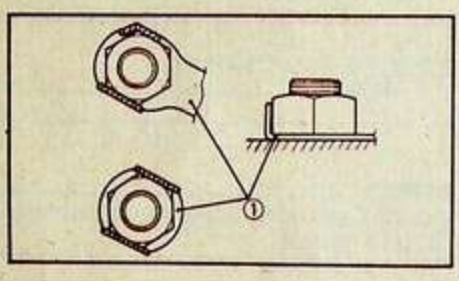
ALL REPLACEMENT PARTS

1. We recommend to use Yamaha genuine parts for all replacements. Use oil and/or grease recommended by Escorts for assembly and adjustment.



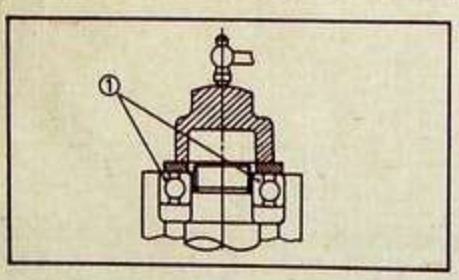
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals, and O-rings should be replaced when an engine is overhauled. All gasket surfaces, oil seal lips, and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



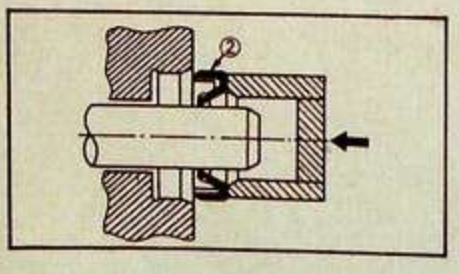
LOCK WASHERS/PLATES AND COTTER PINS

1. All lock washers/plates (1) and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.

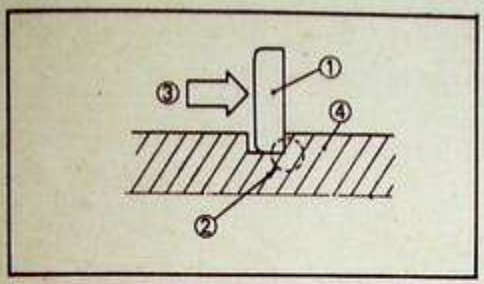


BEARINGS AND OIL SEALS

1. Install the bearings(s) (1) and oil seal(s) (2) with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease (eg. Servo Grease M.P.) to the seal lip(s). Oil the bearings liberally when installing.



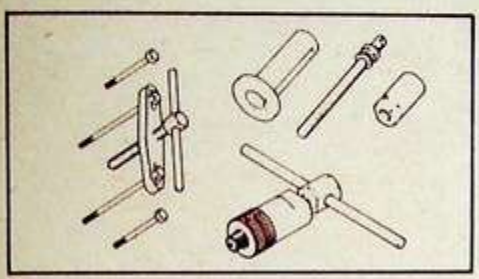
CAUTION:
Do not use compressed air to spin the bearings dry. This causes damage to the bearing surfaces.



CIRCLIPS

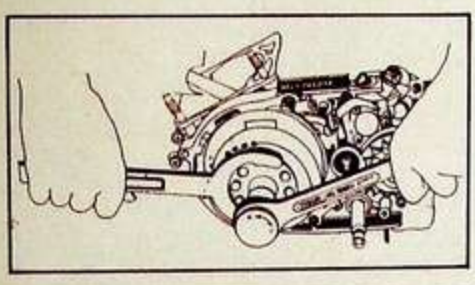
1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ① make sure that the sharp-edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft



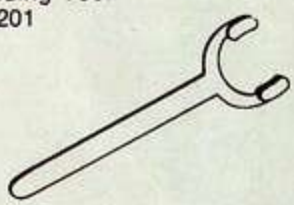
SPECIAL TOOLS

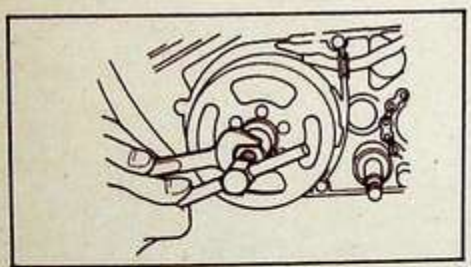
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.



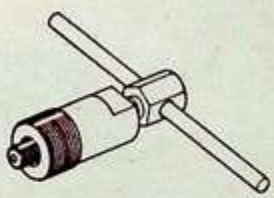
FOR ENGINE SERVICE

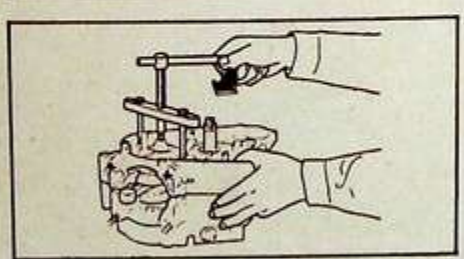
1. Flywheel Holding Tool
   ESM-100000201



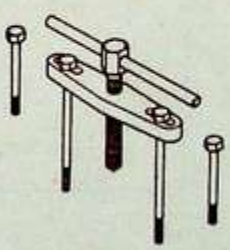


2. Flywheel Puller
   ESM-10000202

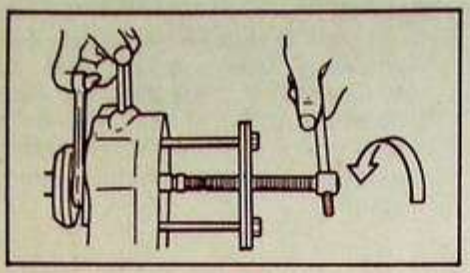


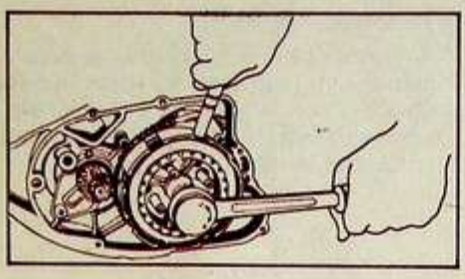


3. Crankcase Separating Tool
   ESM-100000265

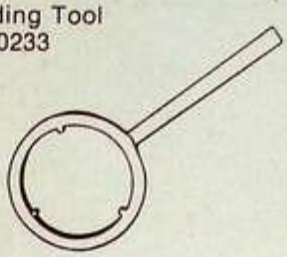


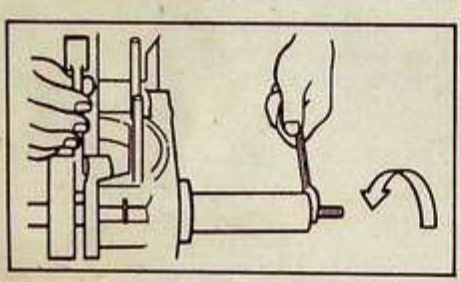
SPECIAL TOOLS



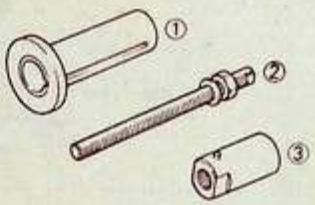


4. Clutch Holding Tool
   ESM-100000233

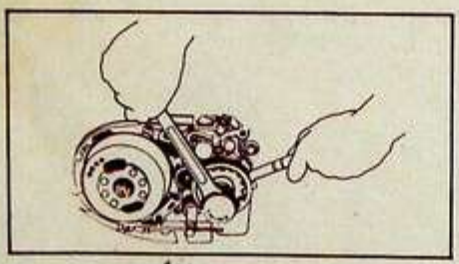




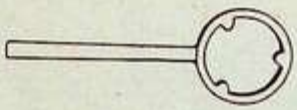
5. Crank Installing Tool
   ESM-100000266

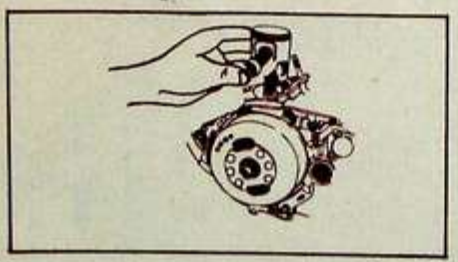


1 Pot
2 Bolt
3 Adapter

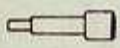


6. Driving Sprocket Holder
   ESM-100000205

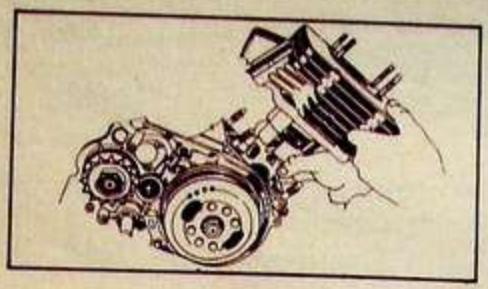




7. Piston Pin Replacer
   ESM-100000207



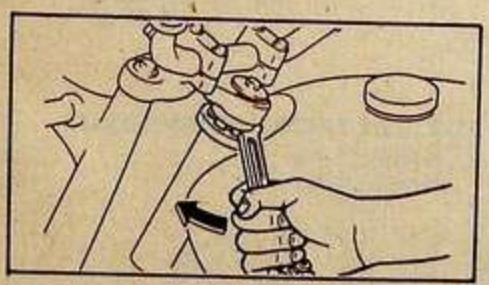
SPECIAL TOOLS



8. Piston Ring Compressor
   ESM-100000210

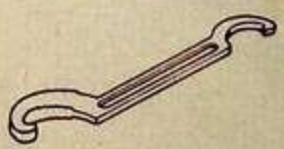
9. Punch
   ESM-100000222
   For Crank-Shaft Seal

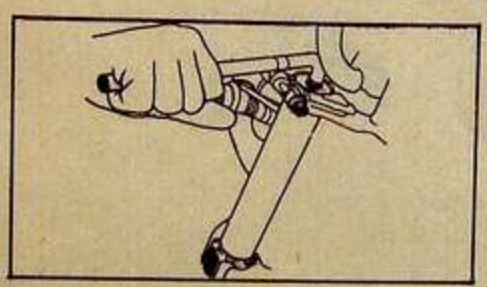
10 Punch
   ESM-100000233
   For Gear Shaft Seal



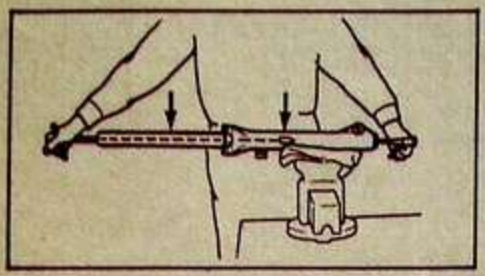
FOR CHASSIS SERVICE

1. Steering Nut Wrench
   ESM-100000221

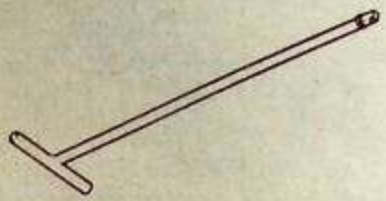


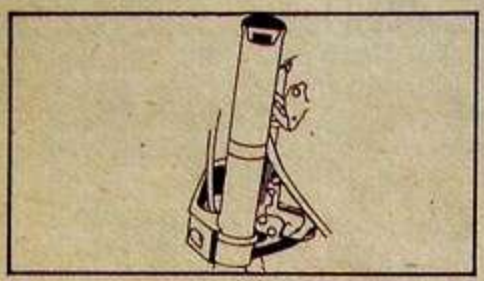


2. Front Fork Top Plug Spanner
   ESM-100000214

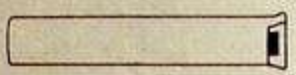


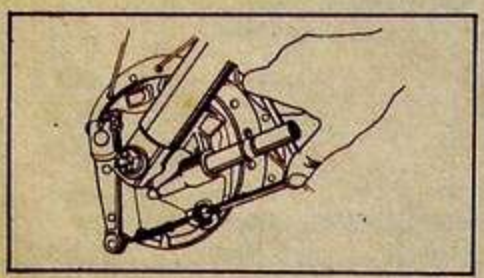
3. T Handle
ESM-100000213



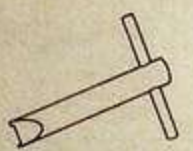


4. Front Fork Inner Tube Adjuster
ESM-100000264



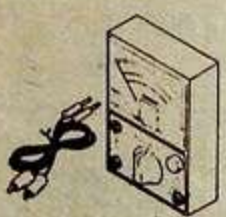


5. Speedometer Gear Nut Spanner
ESM-100000237

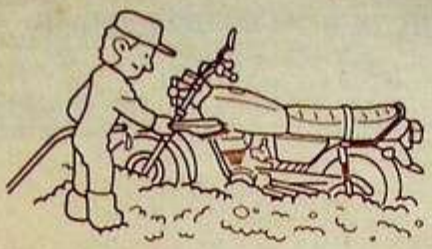


FOR ELECTRICAL COMPONENTS

1. Pocket Tester
ESM-100000270

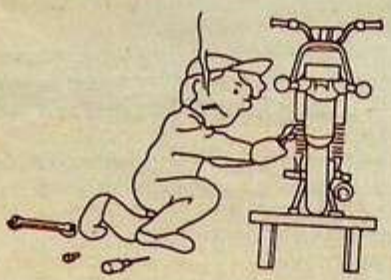


CHAPTER 2
PERIODIC INSPECTIONS AND ADJUSTMENTS

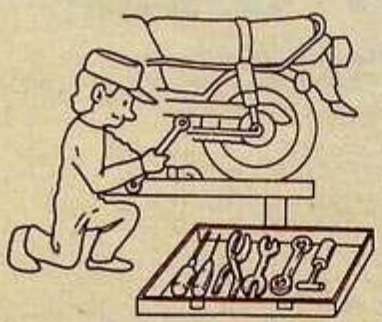


NOTES ON MAINTENANCE

1. Thoroughly clean the frame and engine of dirt and dust in order to prevent them from entering the inside of the engine.



2. Keep off fire.

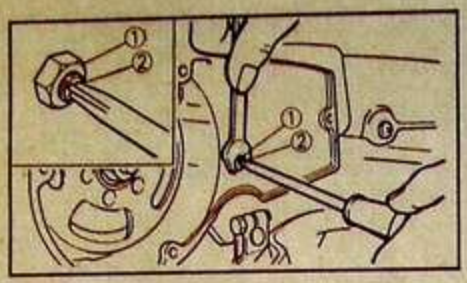


3. When the special tools are required, be sure to use them so that damage to the motorcycle parts can be avoided.
   Always use the right tools and instruments for the right purposes. (Avoid using an open-end wrench as much as possible, in place of a box or socket wrench.)

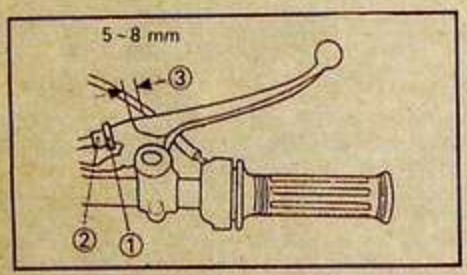
4. Always use a new gasket (packing), O-ring, cotter pin, circlip, lock washer, etc. for repairs. Also use genuine Yamaha parts, oil and grease, or those recommended by Escorts. Avoid using other brands.

5. During service, take special care so that you don't get injured or burnt from the engine, exhaust pipe or muffler.

CLUTCH/BRAKE



4. Loosen:
   • Locknut ①
5. Screw in adjuster ② until tight and back it out 1/4 turn.
6. Tighten:
   • Locknut ①



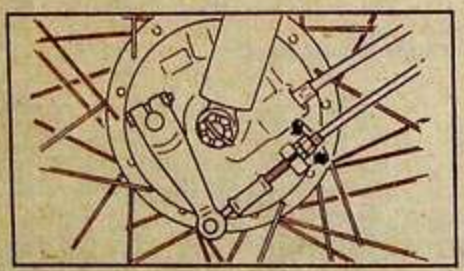
CHASSIS

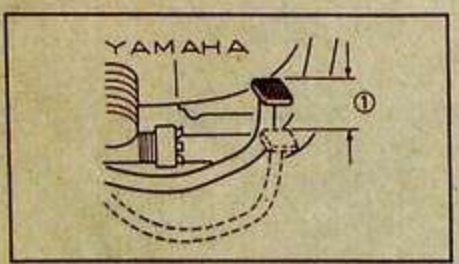
BRAKE

Front

1. Loosen:
   • Locknut ①
2. Adjust:
   • Free play by adjuster ②
3. Tighten:
   • Locknut ①

③ 5~8 mm

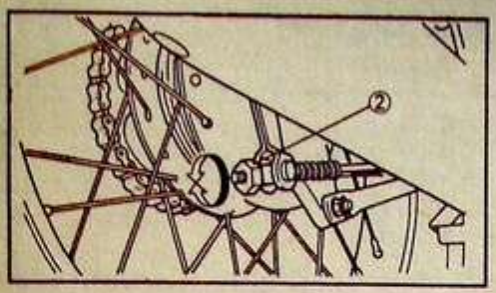




Rear

1. Adjust:
   • Free play ①
   by turning the adjuster ② (Ref. Page 2-11)

① 20~30 mm

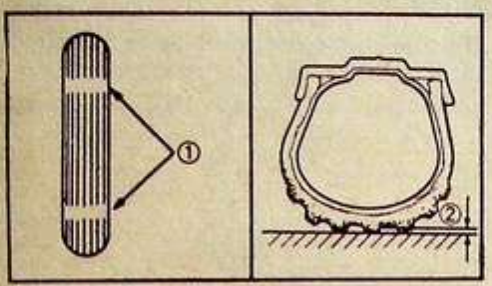


② Adjuster

TYRE

1. Inspect:
   - Tyre wear

	Wear Limit: **1 mm**

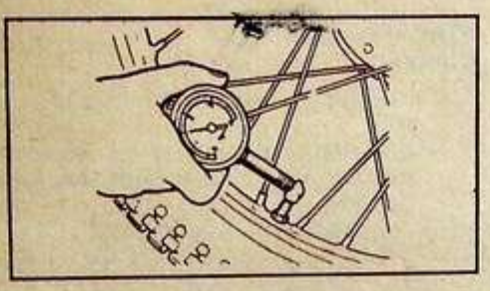


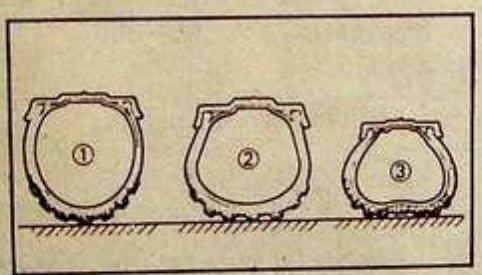
① Wear indicator
② Replacement limit 1 mm

2. Check:
   - Air pressure

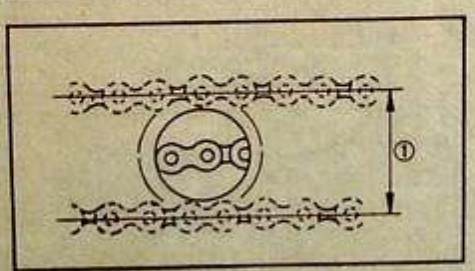
MAXIMUM LOAD*	**162 Kg.**	
	Front	**Rear**
Single Rider	**1.5 kg /cm², (22 psi)**	**2.0 kg /cm², (28 psi)**
Double Rider	**1.5 kg /cm², (22 psi)**	**2.3 kg /cm², (32 psi)**

* Load is the total weight of cargo, rider, passenger, and accessories.





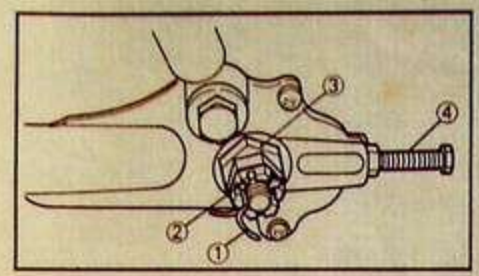
① Too high — Risky — Poor Road holding
② Good — Good & safe riding
③ Too low — Causes higher tyre wear fuel economy low.



DRIVE CHAIN
Slack Check

1. Remove:
   - Rubber cap
2. Check:
   - Drive chain slack①

	Drive Chain Slack: **20~30 mm**



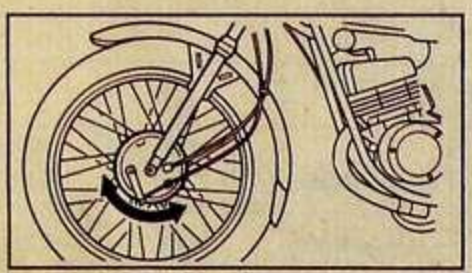
Slack Adjustment

1. Remove:
   - Cotter pin ①
2. Loosen:
   - Axle nut ②
   - Sprocket shaft nut ③
3. Adjust:
   - Slack

④ Adjusting bolt

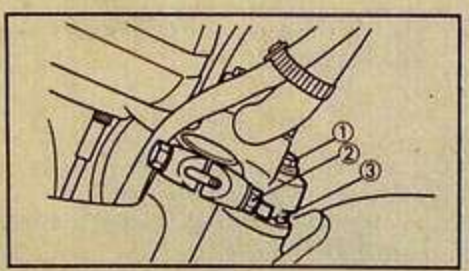
NOTE:

Be sure that both right and left chain pullers are in the corresponding positions.



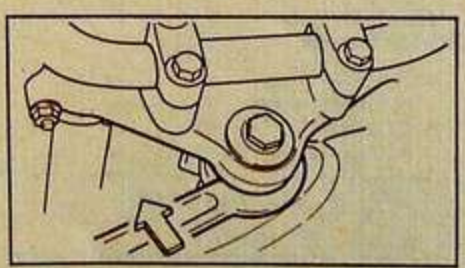
STEERING HEAD
Checking

1. Raise front wheel off the ground.
2. Check:
   - Steering head bearing for looseness
     Gently rock fork assembly backward and forward.
     Looseness → Adjust.



Adjustment:

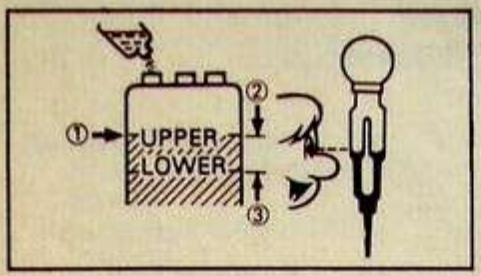
1. Loosen:
   - Steering fitting bolt ①
   - Front fork pinch bolts ②
2. Adjust:
   - Steering head ring nut ③
     Tighten nut until steering head is tight without binding.
     Heavy binding → Replace bearings.



3. Tighten:
   - Steering fitting bolt ①
   - Front fork pinch bolt ②

Steering Fitting Bolt ①:
3.1 m.kg, (22 ft.lb)
Front Fork Pinch Bolt ②:
2.0 m.kg, (14 ft.lb)

BATTERY

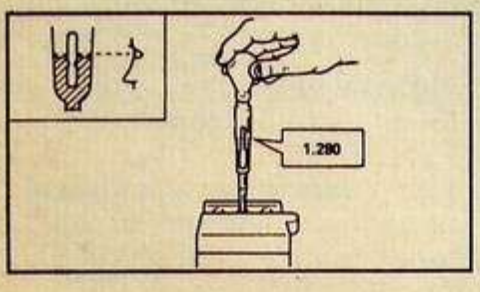


ELECTRICAL

BATTERY

Fluid Level

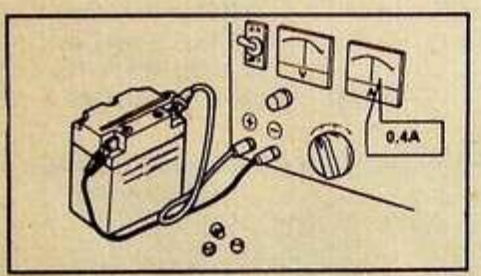
1. Check:
   - Fluid level ①
     Fluid level should be between upper ② and lower level line ③
     Use only distilled water for refilling.



Battery Charging

1. Check:
   - Battery fluid gravity

SPECIFIC GRAVITY		
CLIMATE	INITIAL AT 20°C	FULLY CHARGED (AT 20°C)
TROPICAL (ABOVE 30°C)	1.240	1.240-1.250
COLD/ TEMPERATE (BELOW 30°C)	1.260	1.260-1.270



2. If gravity is below specified, recharge battery.

Charging Current: 0.4 A
Charging Hours: 10 hours

NOTES ON MAINTENANCE

6. Battery
   Take care so that the battery fluid does not spill on your clothes body or the motorcycle.

7. Notes on disassembly and reassembly
   a. Place all removed parts neatly and separately in groups so that they will not be confused or lost.
   b. Wash the engine and transmission parts in a detergent oil and blow them out dry with compressed air.
   c. While checking the smooth movement of parts, install them.
   d. Oil the contact surfaces of the moving parts.

8. Tightening torque.
   Tighten the parts to specification by using the torque wrench.

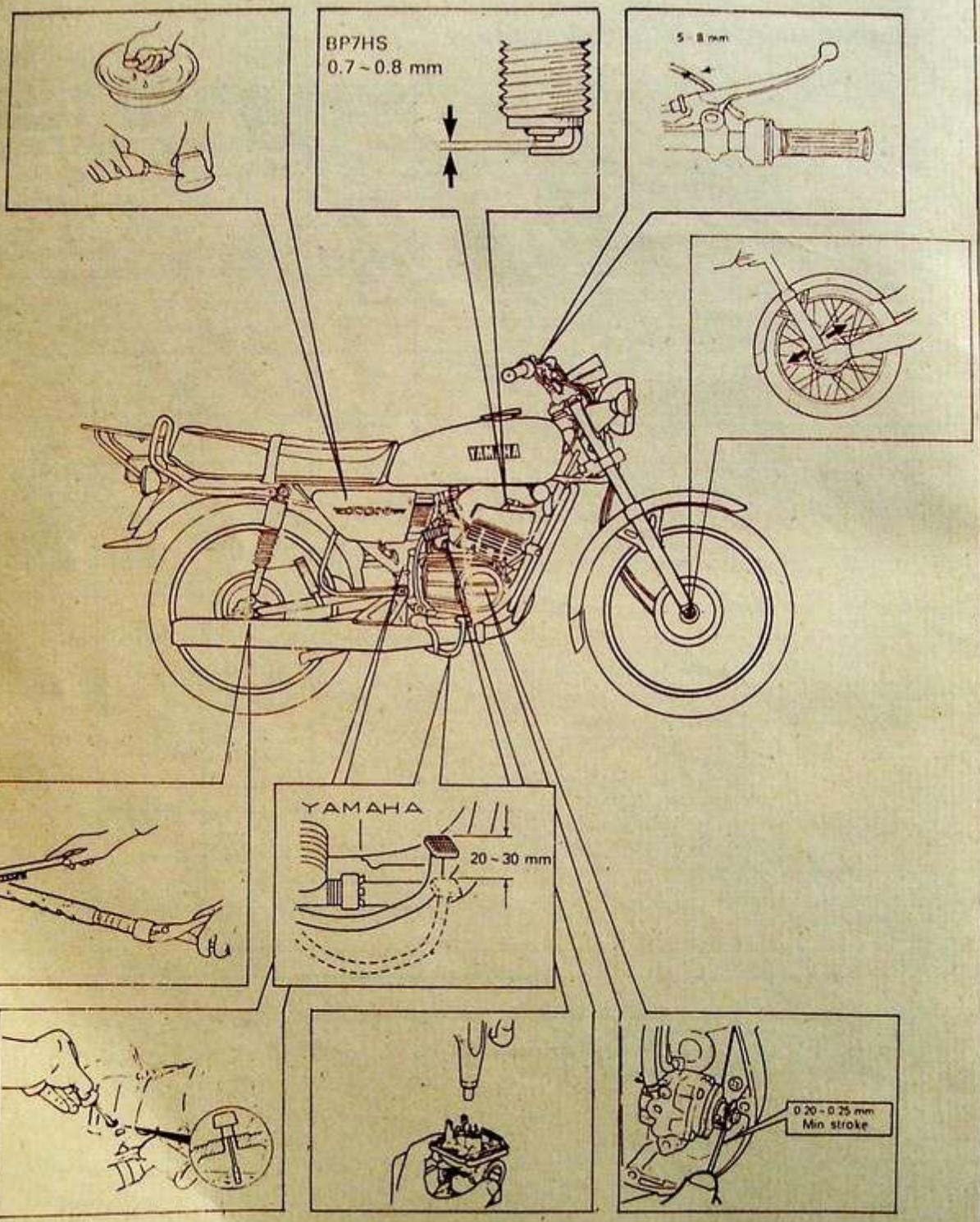
PERIODIC MAINTENANCE/LUBRICATION

Unit : Km.

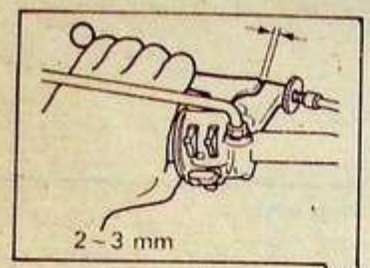
ITEM	REMARKS	BREAK-IN 1,000	THEREAFTER EVERY 3,000 or 3 months	6,000 or 6 months	12,000 or 12 months
Spark Plug	Check/Clean or replace	0	0		
Air filter	Clean, Replace if necessary	0	0		
Carburettor*	Check/Adjust/idle speed, starter operation	0		0	
Fuel line	Check fuel hose for cracks or damage	0	0		
Transmission oil	Replace (Warm engine before draining)	REPLACE	CHECK	REPLACE	
Autolube pump	Check/Adjust*/Air bleeding*	0	0		
Brake*	Check/operation	0	0		
Clutch*	Check operation	0	0	0	
Rear arm pivot*	Check rear arm assembly for looseness. replace Silent block bushes 24,000 or 24 months.	0		0	
Wheels*	Check balance/damage/runout/spoke tightness.	0		0	
Wheel bearings*	Check bearings assembly for looseness/ damage. Replace if damaged.			0	REPACK** GREASE
Steering bearing*	Check bearings assembly for looseness.	0			REPACK** GREASE
FrontFork*	Check operation/oil leakage ††	CHECK		CHECK	REPLACE OIL
Rear Shock absorber	Check operation/oil leakage		0		
Drive Chain	Clean/lube/align* Check tension every 1000 kms./align*		0		
Fittings/Fasteners*	Check all chassis/engine/Cyl./Cyl. Head	0	0		
Battery*	— Check specific gravity †† — Check breather pipe for proper operation. — Check electrolyte level/add distilled water every 15 days.	0	0		
Decarbonising*	Remove carbon from (Cyl./Cyl. Head/ Piston Assy/Muffler)			0	
Ignition Timing*	Check				0
Fuel Strainer	Clean	0	0		
Fuel Tank/Fuel Cock*	Clean				0
Tyres	Check		0		

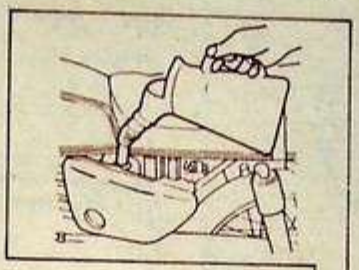
* It is recommended that these items be serviced by Yamaha dealer.
** Medium weight wheel bearing grease.
†† Use 175 ± 3cc 'Servo Teleshocab' oil of M/s Indian Oil.
†† Battery Specific gravity — 1240/20°C

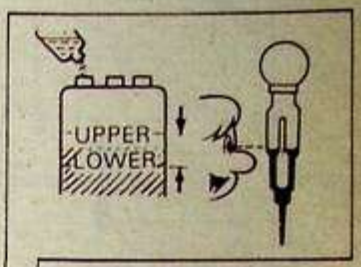
PERIODIC MAINTENANCE/LUBRICATION

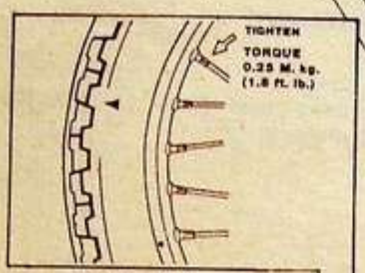


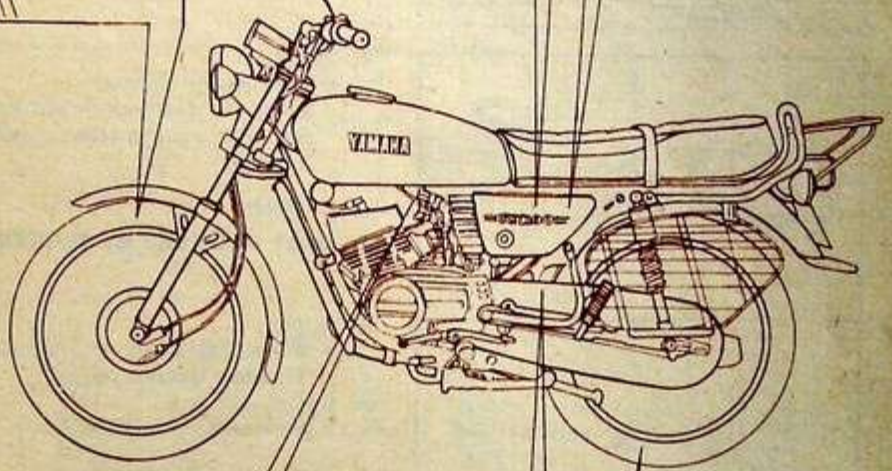
PERIODIC MAINTENANCE/LUBRICATION

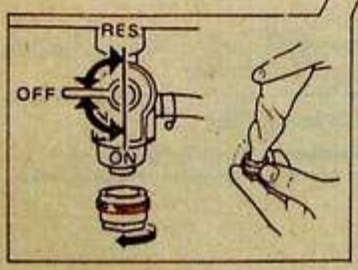


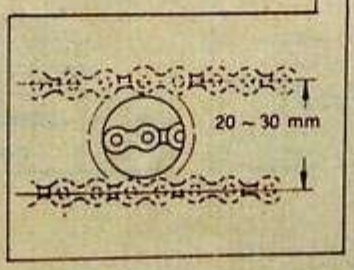


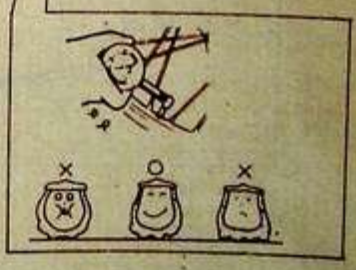


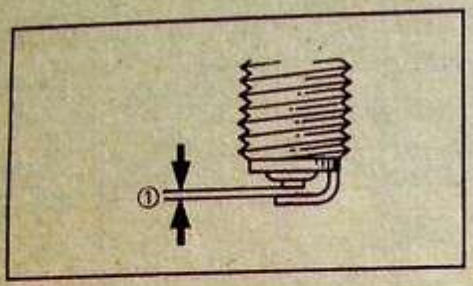










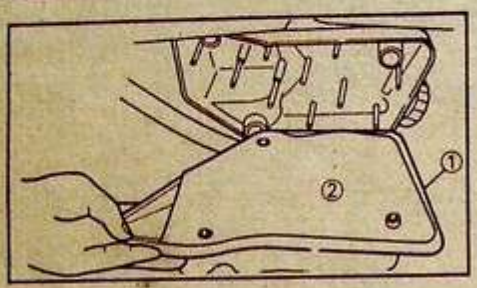


ENGINE

SPARK PLUG

1. Clean:
   - Spark plug
2. Adjust:
   - Plug gap ①

Spark Plug Gap:
0.7~0.8 mm



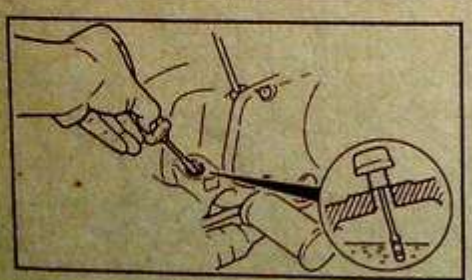
AIR CLEANER ELEMENT

1. Remove:
   - Right side cover
   - Air cleaner case cover ①
   - Air cleaner element ②

2. Clean:
   - Air cleaner element
     Wash the element in solvent.
     Squeeze excess solvent out of the element and dry.

CAUTION:
DO NOT SQUEEZE BY TWISTING

3. Apply:
   - A small quantity of 2-stroke engine oil.
     Squeeze excess oil.
4. Install:
   - Air cleaner element

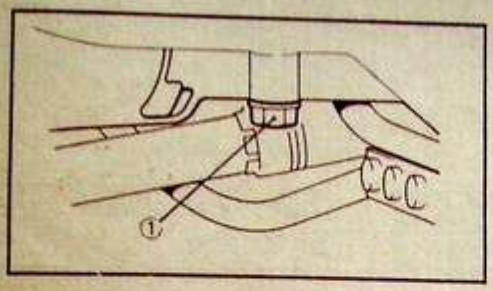


TRANSMISSION OIL

Checking

1. Check:
   - Oil level
     Maintain transmission oil level always between MAX and MIN lines.

Recommended Oil:
Servo Super 30 or Equivalent

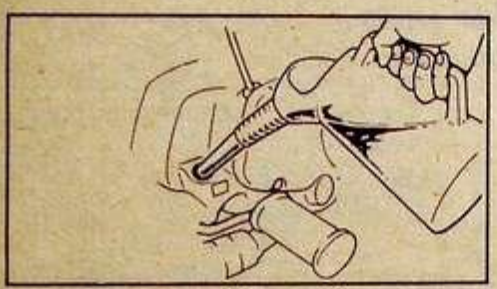


Replacement

1. Start the engine and let it warm up.
2. Remove:
   - Drain bolt ①

   Drain oil after warming up engine.
3. Install:
   - Drain bolt ①

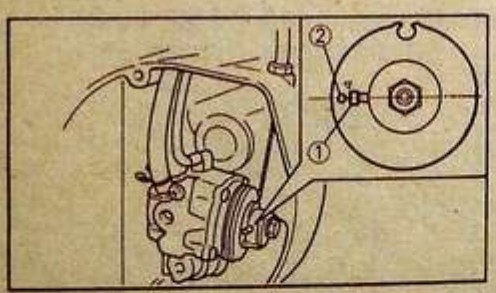
	Drain Bolt: **2.0 m.kg. (14 ft. lb)**



3. Fill:
   - Transmission oil

	0.65 L

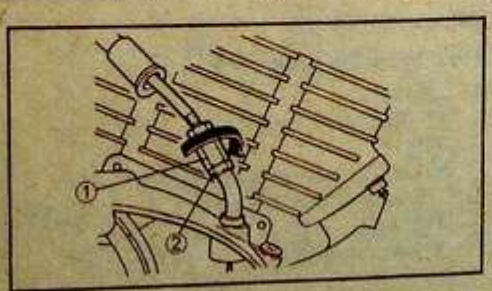
4. Check:
   - Oil level



AUTOLUBE PUMP

Cable Adjustment

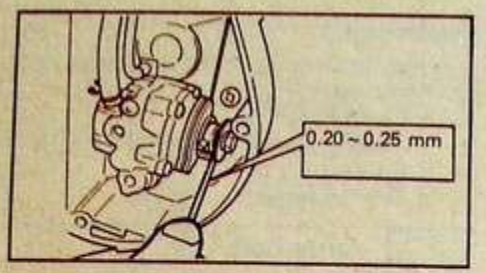
1. Check to see if pump guide pin ① is aligned with mark on adjusting pulley ②



2. If not aligned, align by turning adjuster ① in or out.

② Locknut

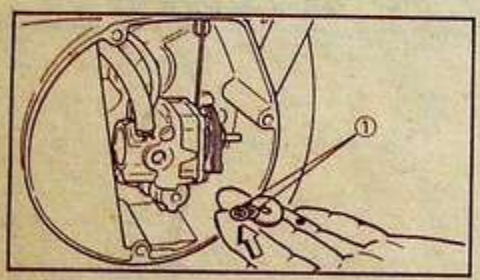
AUTOLUBE PUMP/CARBURETTOR



Minimum pump stroke adjustment

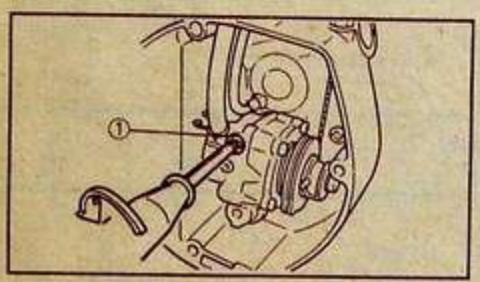
1. Rotate engine so that adjust plate moves out to limit.
2. Measure:
   - Minimum pump stroke

Minimum Pump Stroke:
0.20~0.25 mm



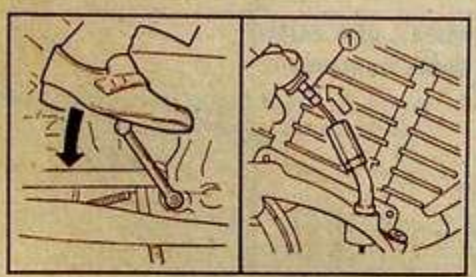
3. If clearance is not correct, adjust by the shim ①

   Adding of shim will increase the stroke and vice versa.

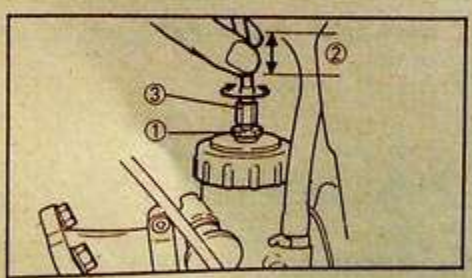


Air Bleeding

1. Remove:
   - Pump bleed screw ①
     Keep oil running out until air bubbles disappear.
2. Install:
   - Bleed screw ①



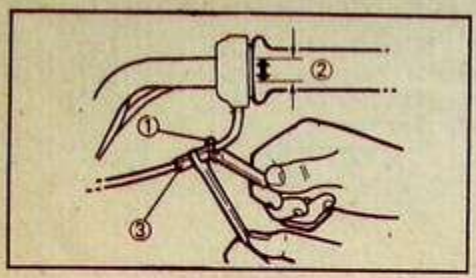
3. Start the engine and pull the pump wire ① all the way for some minutes.



CARBURETTOR

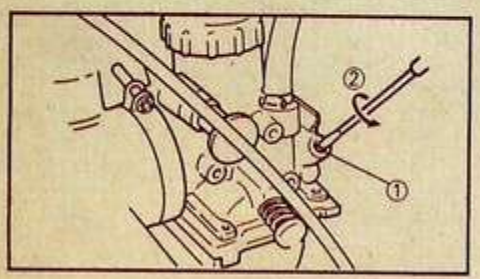
Throttle Grip Free Play

1. Loosen:
   - Locknut ①
2. Adjust:
   - Cable free play ② 1~2 mm
     Turn cable adjuster ③ in or out.
3. Tighten:
   - Locknut ①



Throttle Cable Free Play

1. Loosen:
   - Loosen ①
2. Adjust:
   - Cable free play ② 5~8 mm
     Turn cable adjuster ③ in or out.
3. Tighten:
   - Locknut ①



Idle Speed

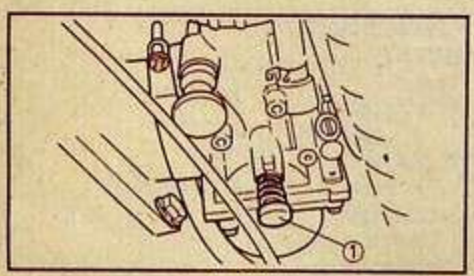
1. Turn pilot air screw ① in until lightly seated.
2. Back out by specified numbers of turns.

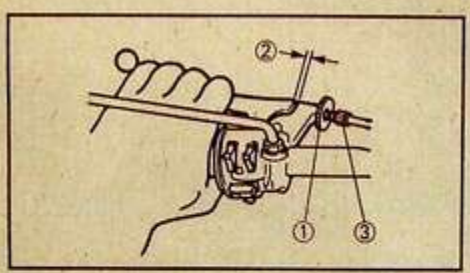
Pilot Air Screw Turn Out:
1-1/4±1/2

② 1-1/1/4 ± 1/2

3. Start the engine and let it warm up.
4. Turn the throttle stop screw ① in or out until idle speed is at specified rpm.

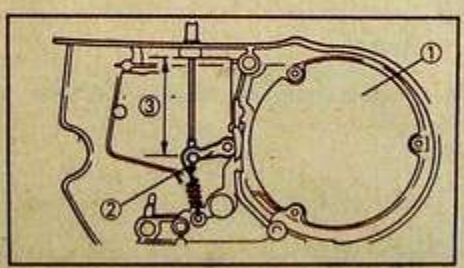
Engine Idle Speed:
1,200 ± 50 rpm





CLUTCH
Cable Adjustment

1. Loosen:
   - Locknut ①
2. Adjust:
   - Cable free play ② 2~3 mm
     Turn cable adjuster ③ in or out.
3. Tighten:
   - Locknut ①

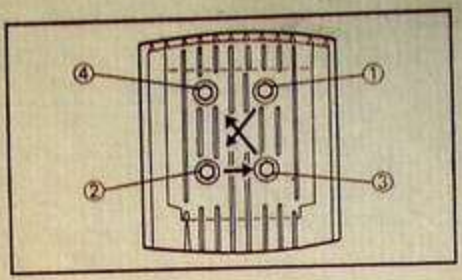


Mechanism Adjustment

1. Remove:
   - Left crankcase cover ①
2. Position the push lever ② by the cable adjuster
3. Install:
   - Left crankcase cover ①

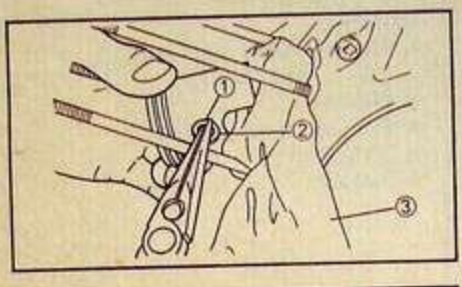
③ 75 mm

CHAPTER 3
ENGINE OVERHAUL



ENGINE DISASSEMBLY
CYLINDER HEAD AND CYLINDER

1. Remove:
   - Cylinder head nuts
   - Cylinder head
   - Cylinder nuts
   - Cylinder

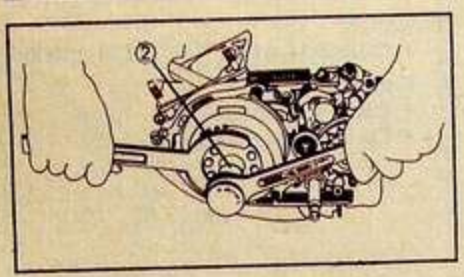


PISTON

1. Remove:
   - Piston pin clip ①
   - Piston pin ②
   - Piston
   - Piston rings

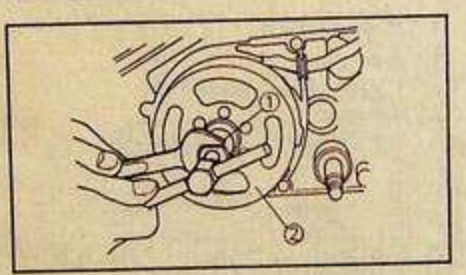
NOTE:

Before removing the piston pin clip, cover the crankcase with a clean rag ③

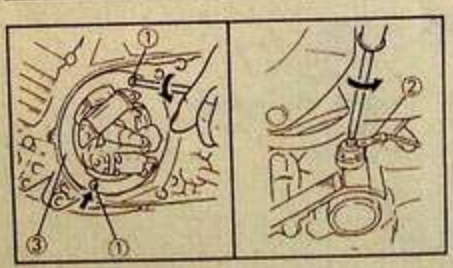


FLYWHEEL MAGNETO

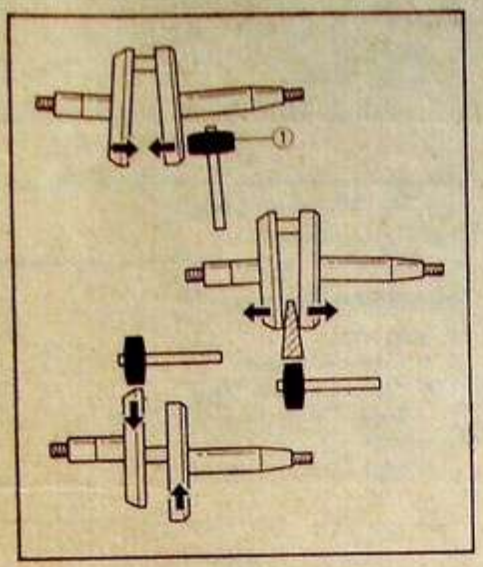
1. Remove:
   - Crankcase cover (Left)
2. Attach:
   - Flywheel Holding Tool ESM-100000201 ①
3. Remove:
   - Flywheel holding nut ②
   - Lock washer
   - Washer



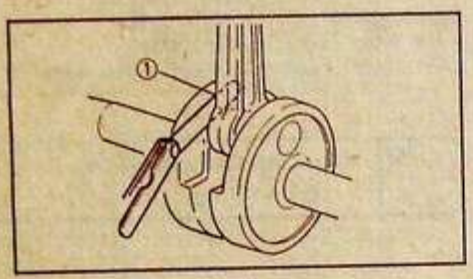
4. Attach:
   - Flywheel Puller ESM-100000202 ① (Left-Hand-Threads)
5. Remove:
   - Flywheel ②
   - Woodruff key



6. Remove:
   - Stator holding screws ①
   - Neutral switch lead wire ②
   - Stator assembly ③

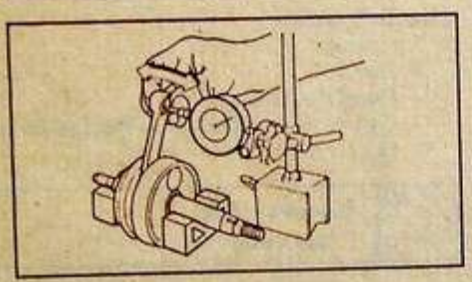


3. Repair:
   • Crankshaft
   Using copper hammer ①



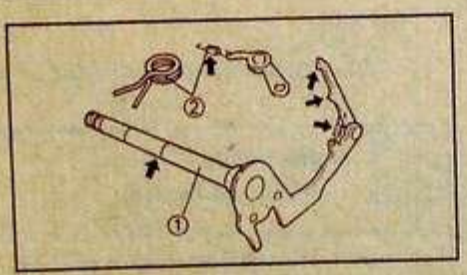
4. Measure:
   • Big end side clearance
   Use feeler gauge ①
   Out of specification → Repair or replace.

Big End Side Clearance:
0.2~0.7 mm



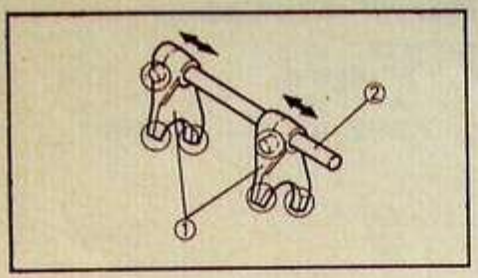
5. Measure:
   • Small end free play
   Out of specification → Replace.

Small End Free Play:
1.5~2.0 mm



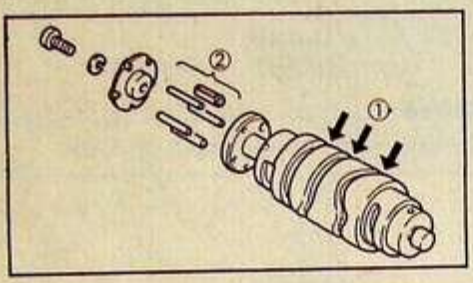
TRANSMISSION
Shift Shaft
1. Inspect:
   • Shift shaft ①
   • Springs ②
   Wear/Bend → Replace.

INSPECTION AND REPAIR



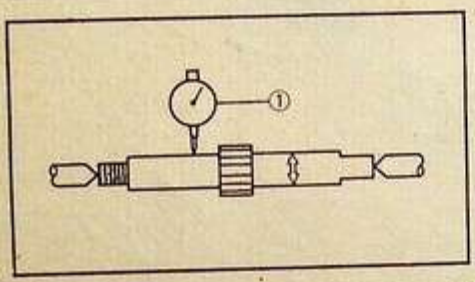
Shift Fork

1. Inspect:
   - Shift forks ①
     (on the gear and shift cam contact surface)
   - Shift fork guide bars ②
     Wear/Chafing/Bends/Damage → Replace.
2. Check:
   - Shift fork movement
     (on shift cam)
     Unsmooth operation → Replace fork and/or guide bar.



Shift Cam

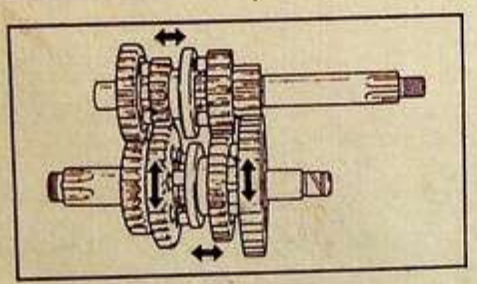
1. Inspect:
   - Shift cam grooves ①
     Wear/Damage/Scratches → Replace.
   - Shift cam pins ②
     Wear/Damage → Replace.



Main Axle and Drive Axle

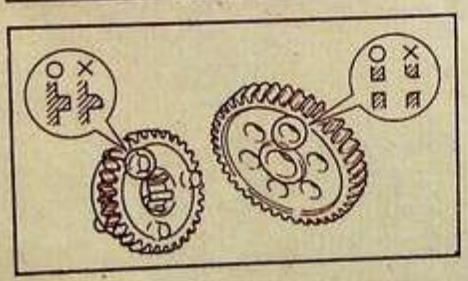
1. Measure:
   - Axle runout
     Use centering device and Dial Gauge ①
     Out of specification → Replace.

Runout Limit:
0.1 mm



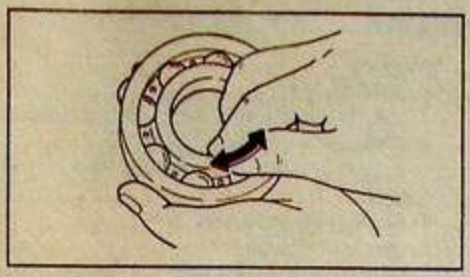
Gears

1. Inspect:
   - Gears
     Damage/Wear → Replace.
2. Check:
   - Gear movement
     Unsmooth operation → Replace.



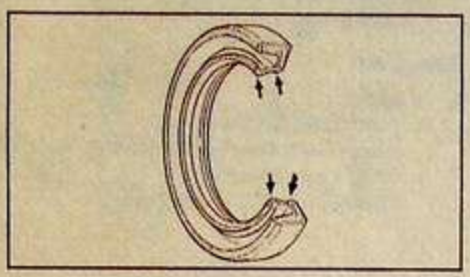
3. Inspect:
   - Matching dogs
     Cracks/Wear/Damage → Replace.

INSPECTION AND REPAIR



BEARING AND OIL SEALS

1. Check:
   - All bearings
     (with finger)
     Rough spot/Play → Replace.



2. Inspect:
   - All oil seal lips
     Damage/Wear → Replace.

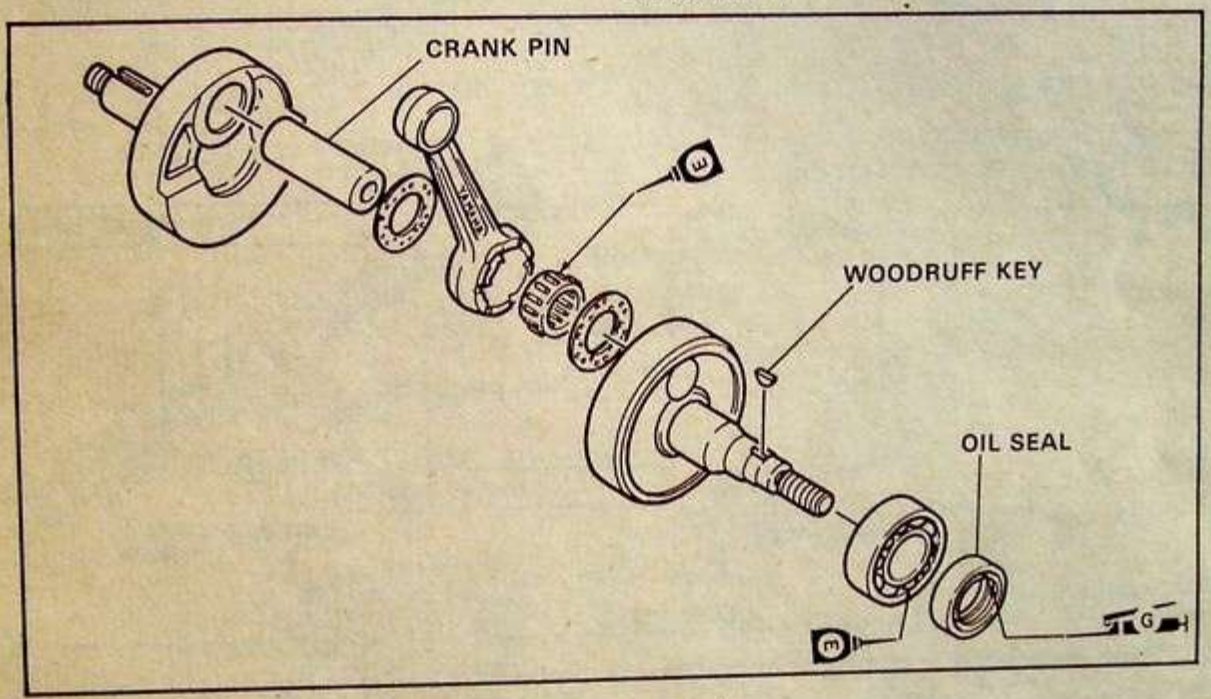
NOTE:

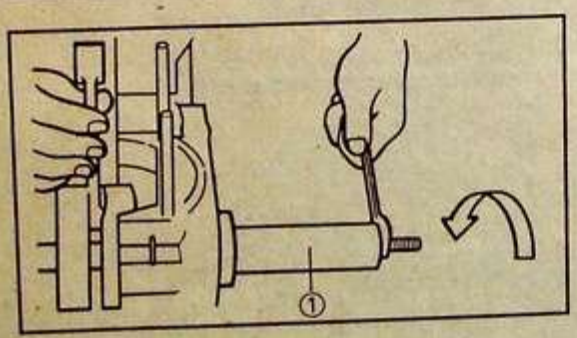
Always replace crankshaft oil seals.

ENGINE ASSEMBLY AND ADJUSTMENT

NOTE:
Before assembling the engine, thoroughly wash the parts in mild solvent.

CRANKSHAFT

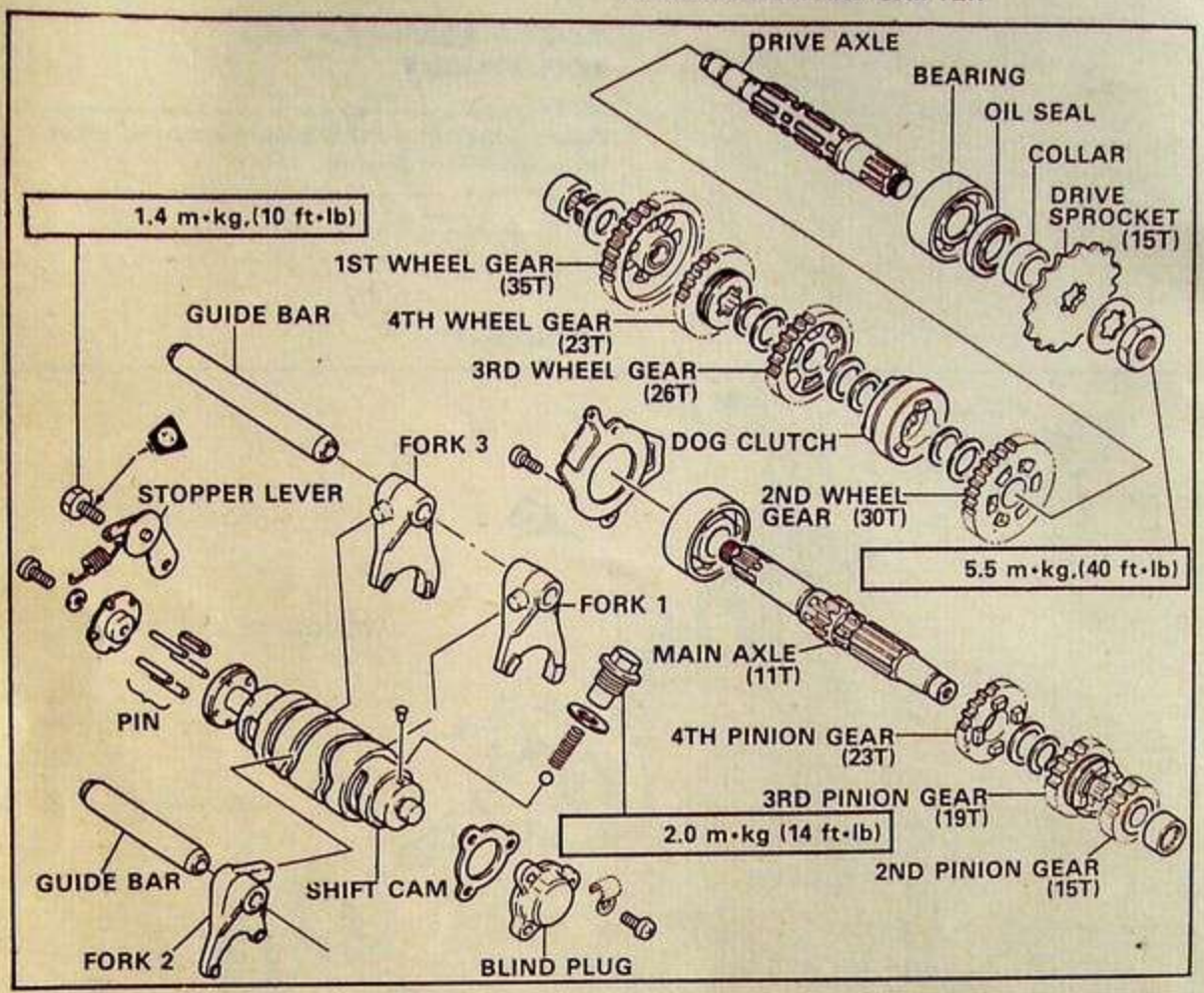


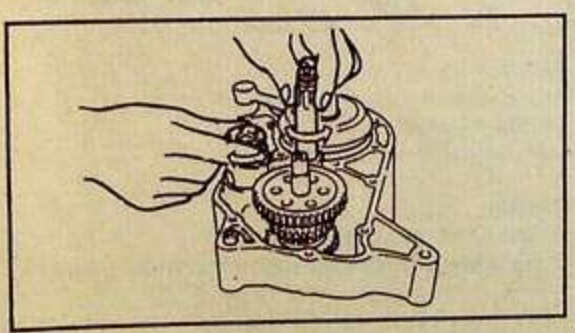


1. Attach:
   - Crankshaft Installing Tool ESM-100000266 (1) (to the left side crankcase)
2. Tighten:
   - Nut of the installing tool
     Hold the connecting rod at top dead center.

ENGINE ASSEMBLY AND ADJUSTMENT

TRANSMISSION AND SHIFTER

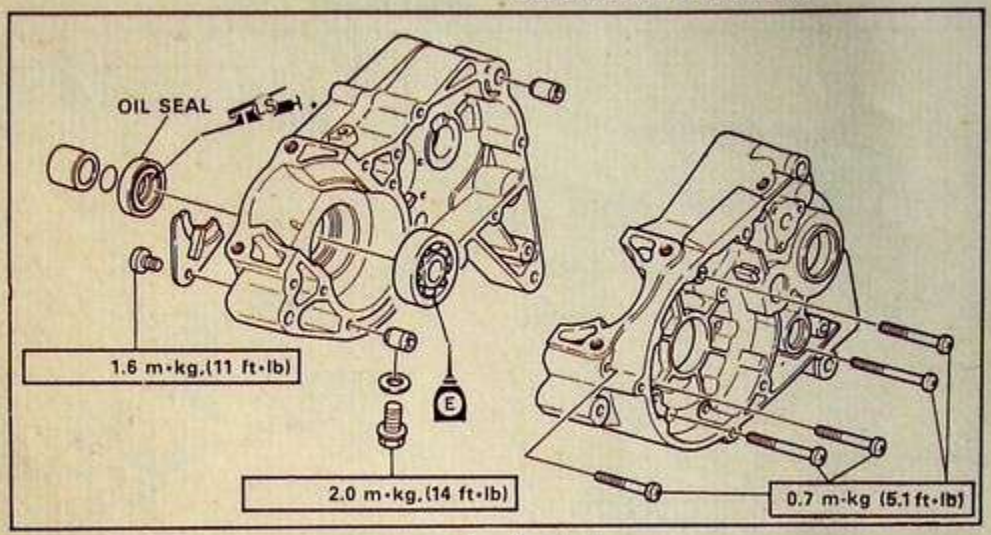


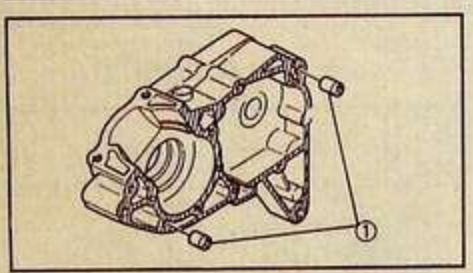


1. Install:
   - Transmission assembly
2. Check:
   - Transmission operation
     Incorrect operation → Reassembly.

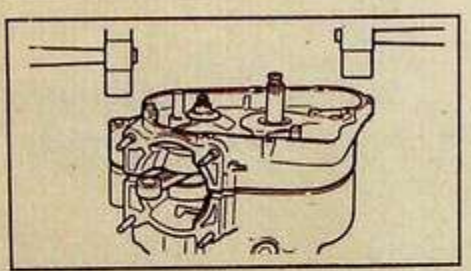
ENGINE ASSEMBLY AND ADJUSTMENT

CRANKCASE ASSEMBLY

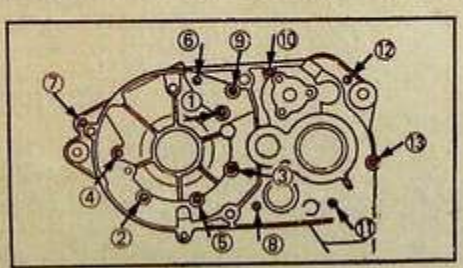




1. Apply:
   - Yamaha Bond No.4
     (to both crankcase mating surfaces.)
2. Install:
   - Dowel knock pins (1)



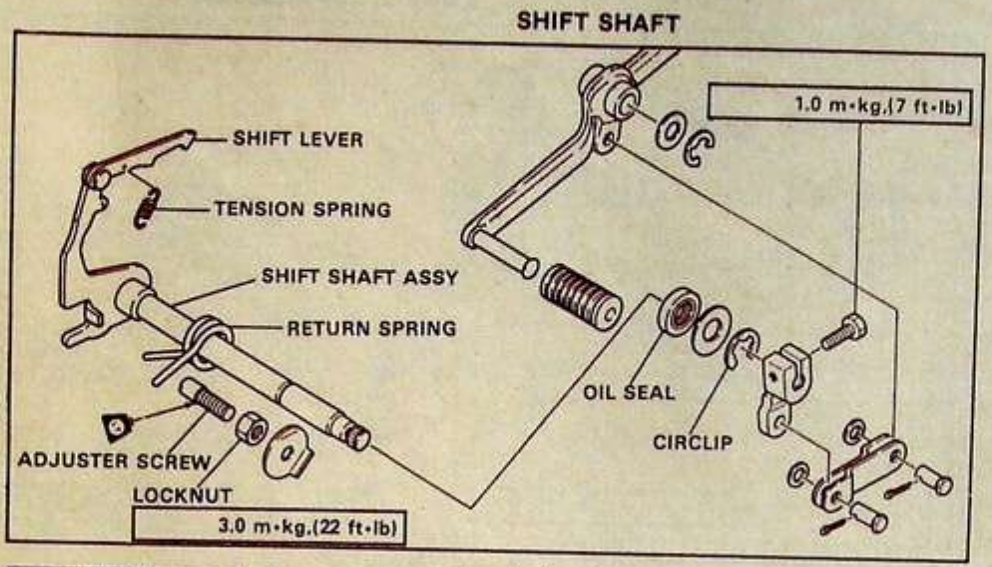
3. Install:
   - Right crankcase half
     (Tap with plastic hammer)

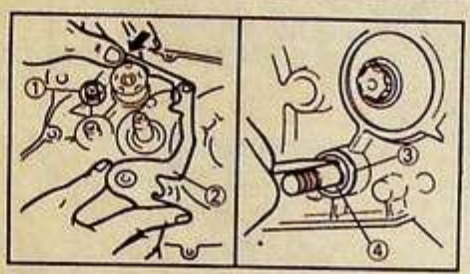


4. Tighten:
   - Crankcase tightening screws
     Tighten the screws in showing sequence and in two steps.

	0.7 m.kg. (5.1 ft.lb)

ENGINE ASSEMBLY AND ADJUSTMENT

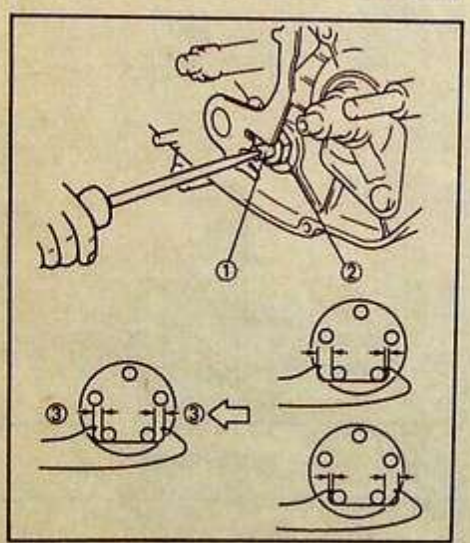




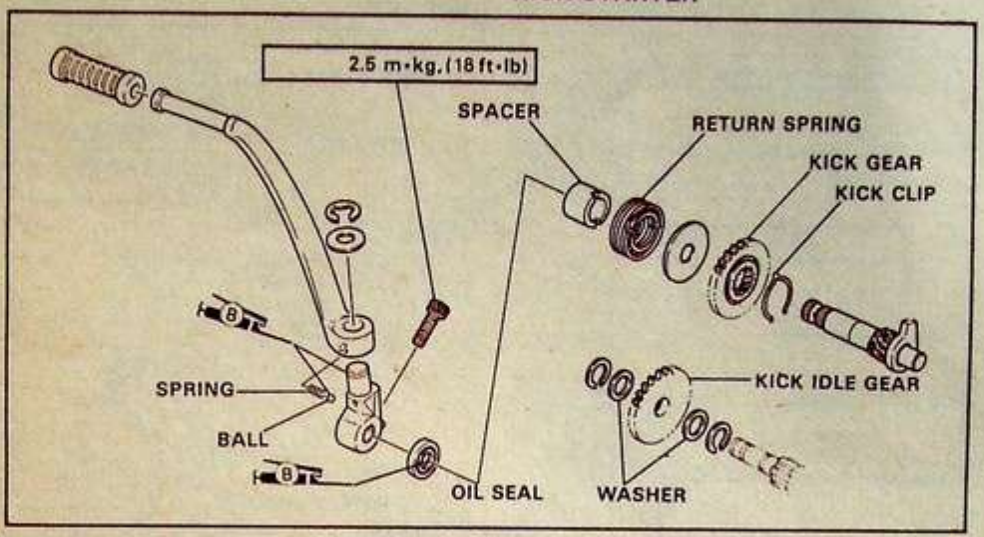
1. Install:
   - Stopper lever assembly ①

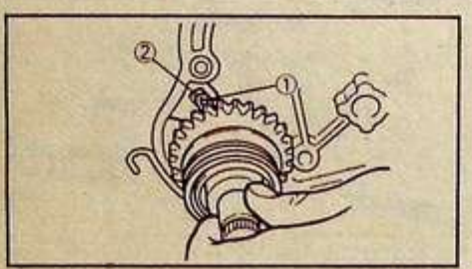
	1.4 m.kg, (10 ft.lb)

   - Shift shaft assembly ②
   - Washer ③
   - Circlip ④
2. Adjust:
   - Shift lever position
     (by adjuster screw ① and locknut ②)
3. Gap ③ To be equal on both sides.

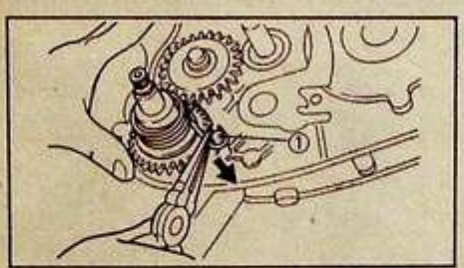


KICK STARTER

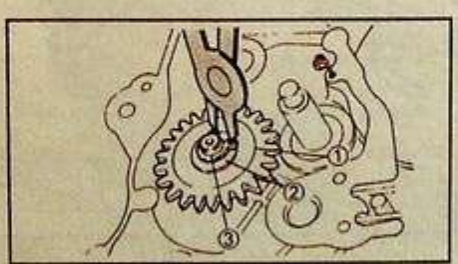




1. Install:
   - Kick starter assembly
2. Position the kick clip ① in groove ② of the crankcase as shown.

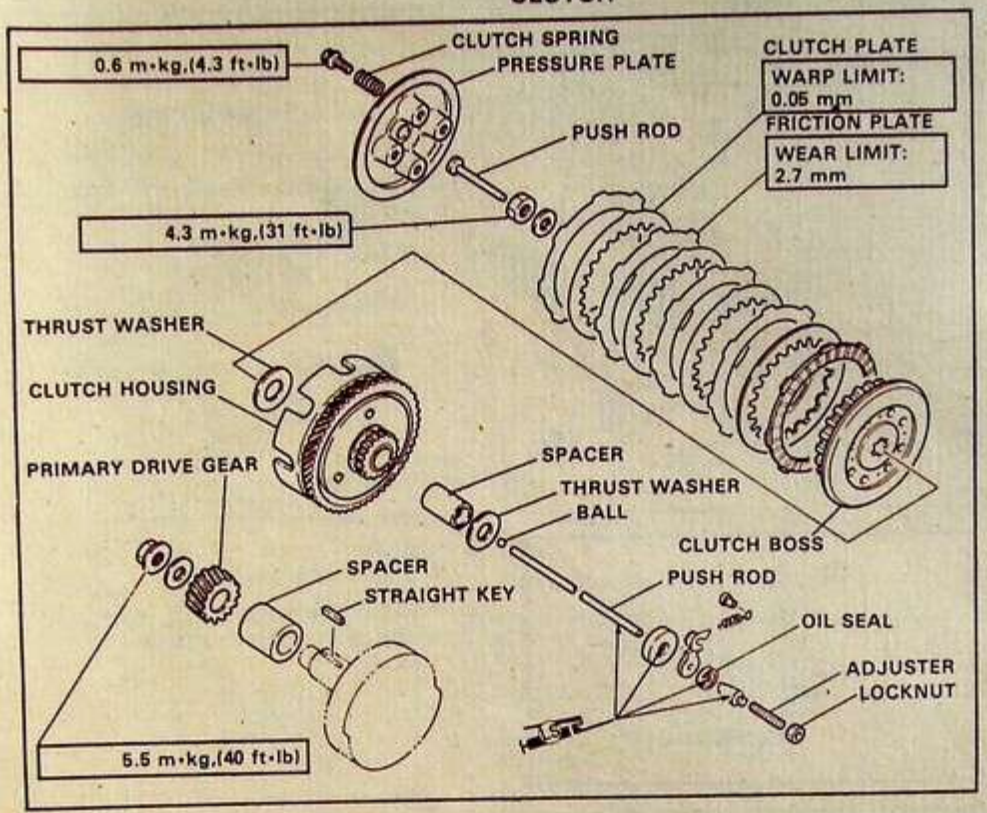


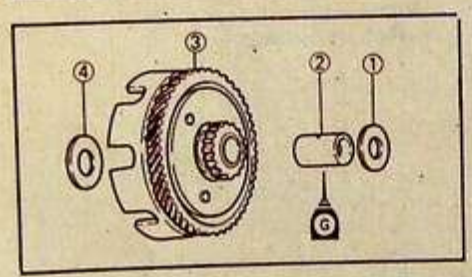
3. Hook:
   - Return spring ①



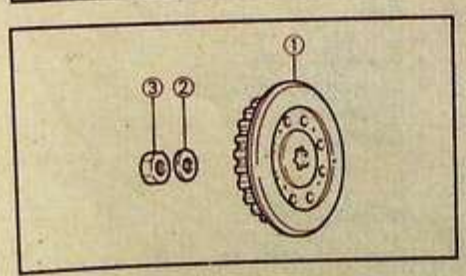
4. Install:
   - Circlip
   - Washer
   - Kick idle gear ①
   - Washer ②
   - Circlip ③

CLUTCH





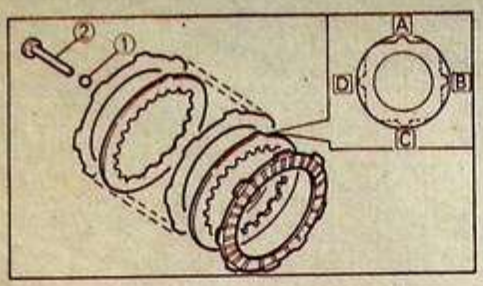
1. Install:
   - Thrust washer ①
   - Spacer ②
   - Clutch housing ③
   - Thrust washer ④



2. Install:
   - Clutch boss ①
   - Washer ②
   - Nut ③

	Clutch Boss: 4.3 m•kg, (31 ft•lb)

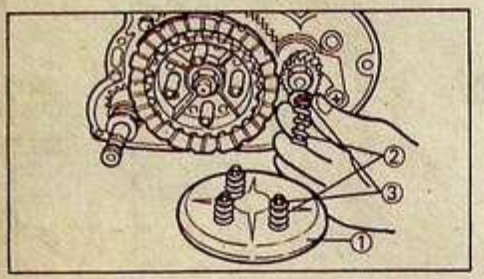
ENGINE ASSEMBLY AND ADJUSTMENT



3. Install:
   - Friction plates
   - Clutch plates
   - Ball (1)
   - Push rod (2)

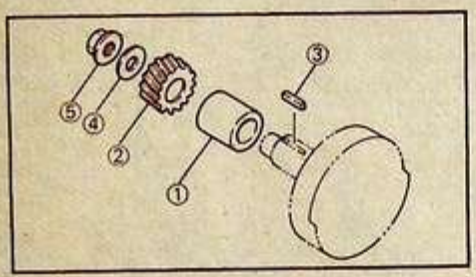
CAUTION:
The clutch plates must be so installed that their cutaways do not overlapeach other.

A : 1st B : 2nd C : 3rd D : 4th



4. Install:
   - Pressure plate (1)
   - Springs (2)
   - Bolts (3)

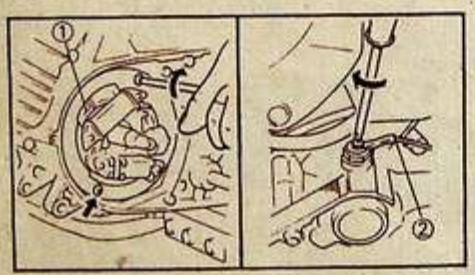
	Clutch Spring Nut: **0.6 m.kg. (4.3 ft.lb)**



PRIMARY DRIVE GEAR

1. Install:
   - Spacer (1)
   - Primary drive gear (2)
   - Straight key (3)
   - Washer (4)
   - Nut (5)

	Primary Drive Gear: **5.5 m.kg (40 ft.lb)**



FLYWHEEL MAGNETO

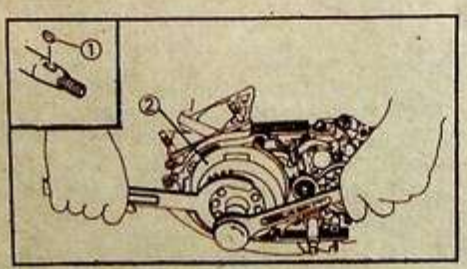
1. Install:
   - Stater assembly (1)

	Stator: **0.7 m.kg, (5.1 ft.lb)**

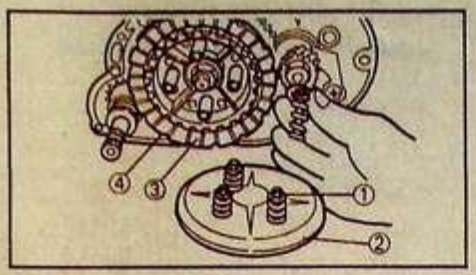
2. Connect:
   - Neutral switch led wire (2)

3. Install:
   - Woodruff key (1)
   - Flywheel (2)

	Flywheel Magneto: **7.0m.kg. (50 ft.lb)**

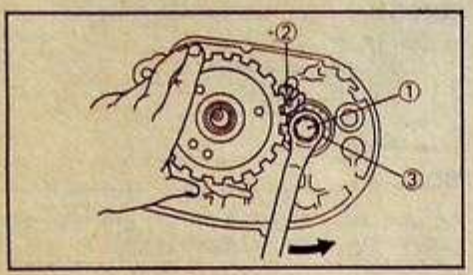


ENGINE DISASSEMBLY

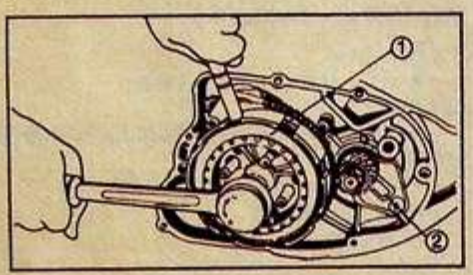


CLUTCH

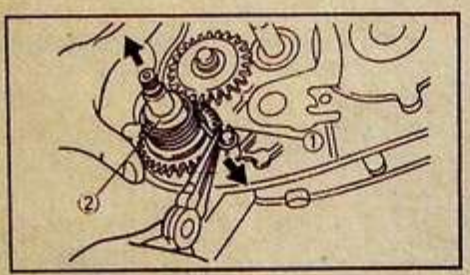
1. Remove:
   - Crankcase cover (Right)
   - Clutch spring bolts ①
   - Clutch springs
   - Pressure plate 1 ②
   - Friction plates ③
   - Clutch plate ④



2. Remove:
   - Primary drive gear nut ①
     Use folded rag ②
   - Washer
   - Primary drive gear ③
   - Straight key
   - Spacer

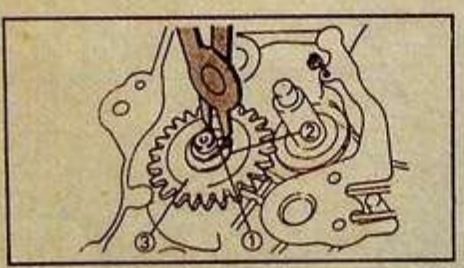


3. Attach:
   - Clutch Holding Tool ESM-100000233 ①
4. Remove:
   - Clutch assembly
   - Oil seal retainer ②



KICK STARTER

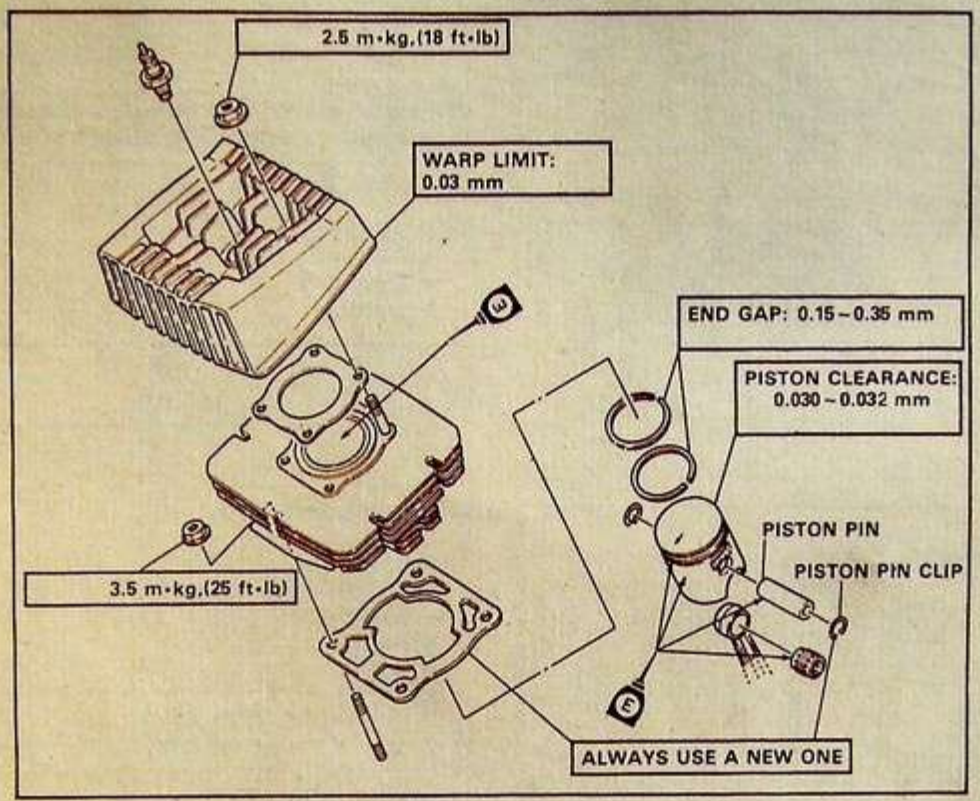
1. Unhook:
   - Kick return spring ①
2. Remove:
   - Kick starter assembly ②

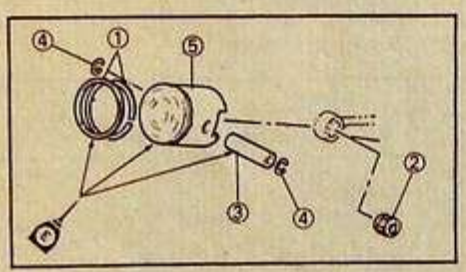


3. Remove:
   - Circlip ①
   - Washer ②
   - Kick idle gear ③
   - Washer
   - Circlip

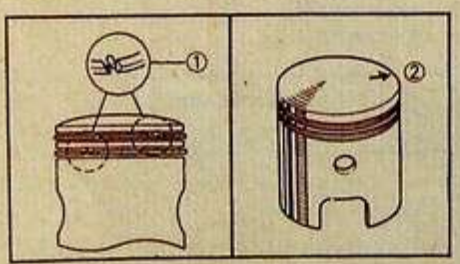
ENGINE ASSEMBLY AND ADJUSTMENT

PISTON



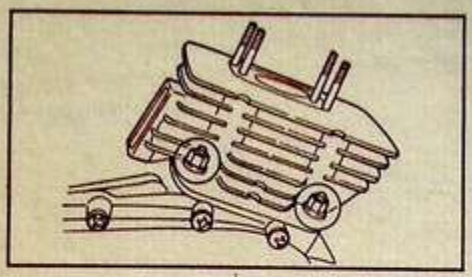


1. Install:
   - Piston rings (1)
   - Small end bearing (2)
   - Piston pin (3)
   - Piston pin clips (New) (4)
   - Piston (5)



NOTE:
- Make sure ring ends (1) are properly fitted around ring locating pins in piston grooves.
- The arrow (2) on piston dome must face exhaust side.

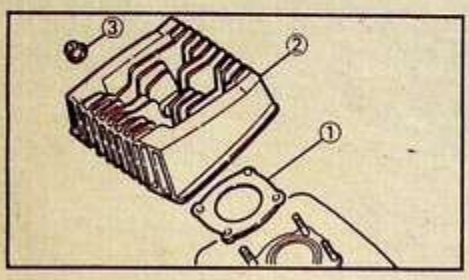
ENGINE ASSEMBLY AND ADJUSTMENT



CYLINDER

1. Install
   - Gasket (New)
   - Cylinder

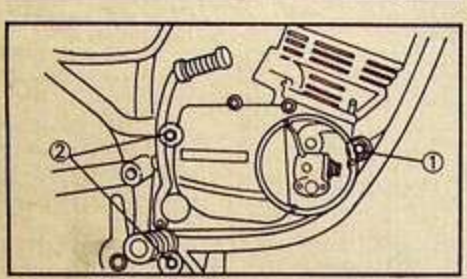
Cylinder:
3.5 m.kg, (25 ft.lb)



CYLINDER HEAD

1. Install:
   - Head gasket ①
   - Cylinder head ②
   - Nuts ③

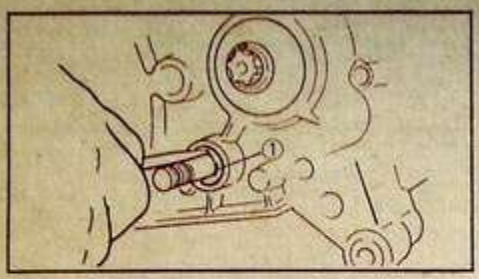
Cylinder Head:
2.5 m.kg, (18 ft.lb)



ENGINE MOUNTING

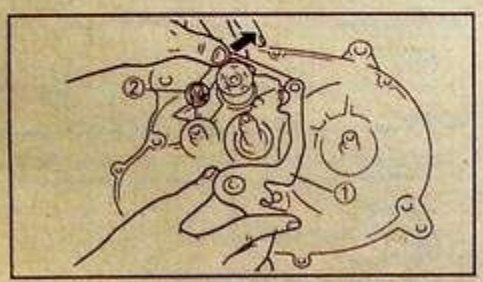
Engine Mount Bolts:
① 3.0 m.kg, (22 ft.lb)
② 6.0 m.kg, (43 ft.lb)

ENGINE DISASSEMBLY

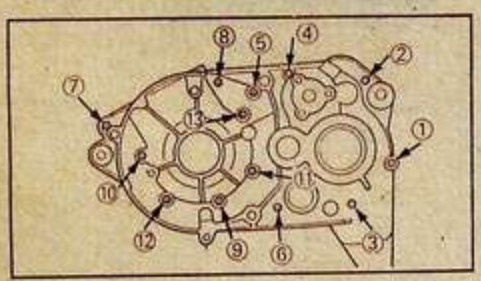


SHIFT SHAFT

1. Remove:
   - Circlip ①
     (on left side)

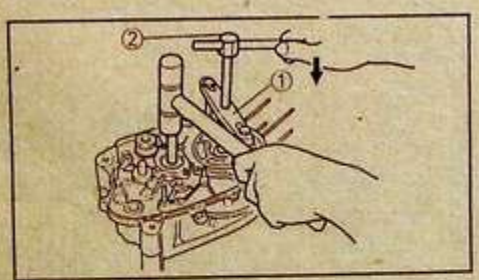


2. Remove:
   - Shift shaft assembly ①
   - Stopper lever assembly ②



CRANKCASE

1. Remove:
   - Crankcase tightening screws

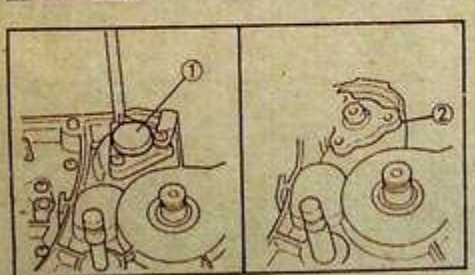


2. Attach:
   - Crankcase separating too ESM-100000265 ①
     (to the right side crankcase)

NOTE:

Make sure the tool body is parallel with the case.

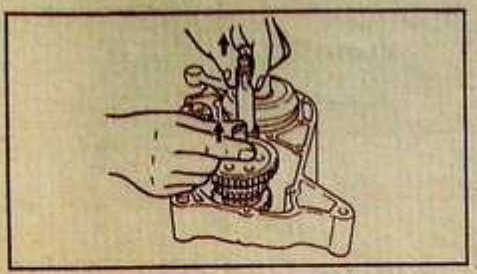
3. Tighten:
   - Securing bolt ②



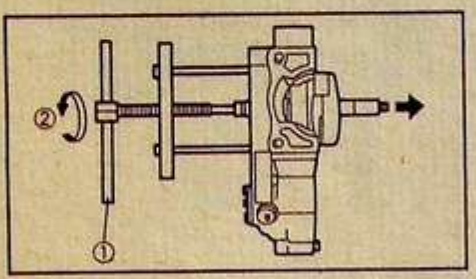
TRANSMISSION AND SHIFTER

1. Remove:
   - Shift cam blind plug ①
   - Gasket ②

ENGINE DISASSEMBLY



2. Remove:
   • Transmission assembly



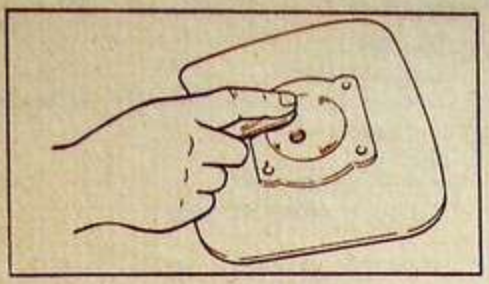
CRANKSHAFT

1. Attach:
   • Crankcase separating tool ESM-100000265 ①

NOTE:

Make sure the tool body is parallel with the case.

2. Tighten:
   • Securing bolt ②
3. Remove:
   • Crankshaft Assy.



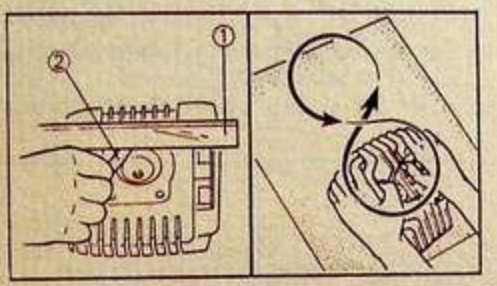
INSPECTION AND REPAIR

CYLINDER HEAD

1. Remove:
   - Carbon deposit
     Use rounded scraper.

NOTE:

Do not use a sharp instrument and avoid damaging or scratching.



2. Measure:
   - Cylinder head warpage
     Out of specification → Resurface or replace.

	Less than 0.03 mm

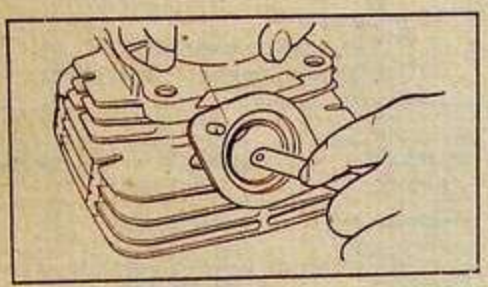
① Straight edge
② Thickness gauge

CYLINDER

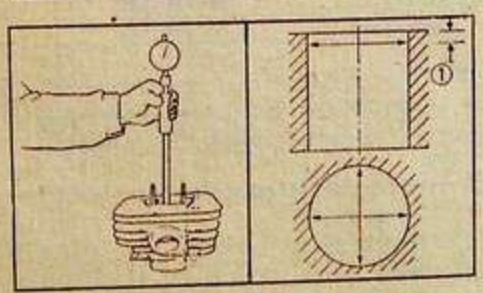
1. Remove:
   - Carbon deposit
     Use rounded scraper.

NOTE:

Do not use a sharp instrument and avoid damage or scratching.



2. Inspect
   - Cylinder wall
     Wear/Scratches → Rebore or replace.
3. Measure
   - Cylinder bore "C"
     Use Cylinder Bore Gauge.
     Out of specification → Rebore.



① 10

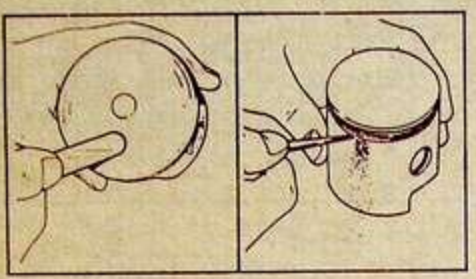
	Standard	Wear Limit
Cylinder Bore C:	50.00 50.02 mm	50.1 mm
Cylinder Taper T:	—	0.05 mm

C = Cylinder bore
T = (Maximum C)-(Minimum C)

INSPECTION AND REPAIR

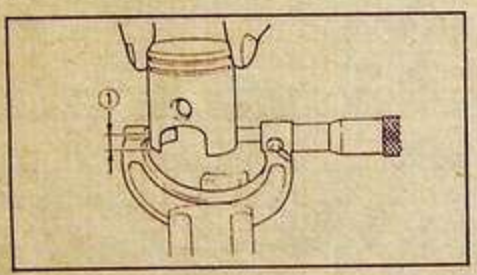
PISTON

1. Inspect:
   - Piston wall
     Wear/Scratches/Damages → Repair or replace.
2. Remove:
   - Carbon deposit
     Use rounded scraper.



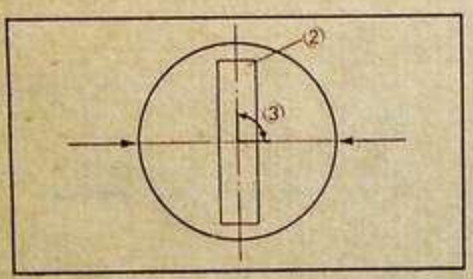
NOTE:

- Do not use a sharp instrument and avoid damaging or scratching.
- After correcting, clean the piston with a clean cloth.



3. Measure:
   - Piston outside diameter "P"
     Out of specification → Replace.

	Size A
Standard <Limit>	49.966 — 49.986 mm 49.90 mm
Oversize 1 Oversize 2	50.25 mm 50.50 mm
Oversize 3 Oversize 4	50.75 mm 51.00 mm



NOTE:

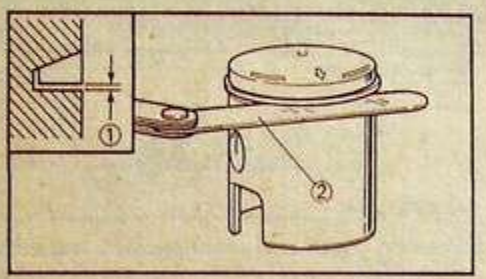
- Measurement should be made at a point 10mm above the bottom edge of the piston skirt.

① 10 mm
② Piston pin
③ 90°

4. • Piston clearance
   Out of specification → Rebore cylinder or replace piston.

Piston Clearance = Minimum Cylinder Bore 'C' — Piston dia 'P'
0.030~0.038 mm

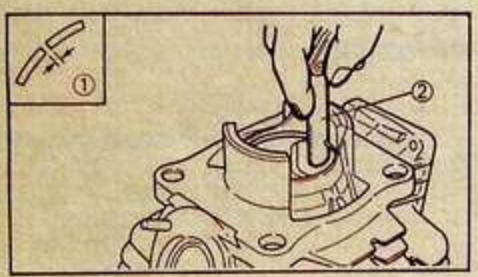
C = Maximum cylinder bore
P = Piston outside diameter



PISTON RING

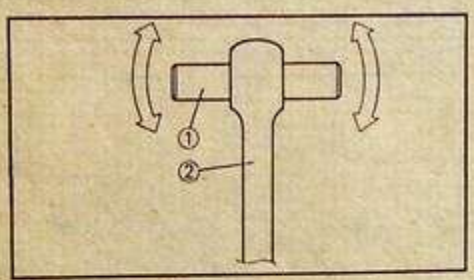
1. Measure:
   - Side clearance ①
     Use a feeler gauge ②
     Out of specification → Replace piston and/or rings.

Side Clearance:	**0.02 — 0.06 mm**



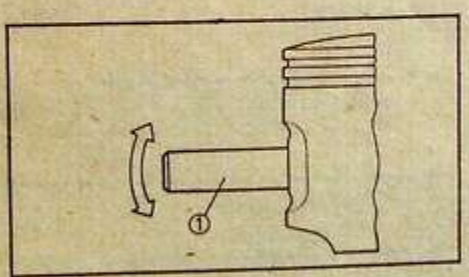
2. Measure:
   - End gap: ①
     Use feeler gauge ②
     Out of specification → Replace rings as a set.

	Standard	Limit
End Gap: (Installed)	**0.15~0.35 mm**	**0.6 mm**

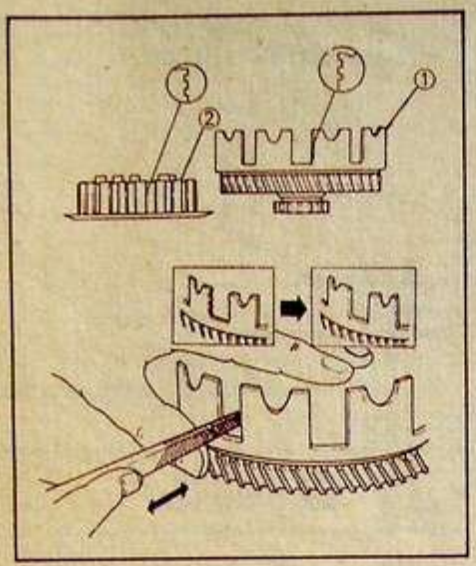


PISTON PIN AND SMALL END BEARING

1. Lubricate:
   - Piston pin ① and bearing
2. Install:
   - Piston pin and bearing
     (into small end of connecting rod ②)
3. Check:
   - Free play
     Free play → Inspect connecting rod for wear.
     Wear → Inspect connecting rod and piston pin.



4. Install:
   - Piston pin ①
     (into piston)
5. Check:
   - Free play
     Free play → Replace piston pin and/or piston.



CLUTCH

Clutch Housing

1. Inspect:
   - Dogs on housing (1)
     Cracks/Wear/Damage → Deburr or replace.
2. Check:
   - Circumferential play
     Play → Replace.

NOTE:

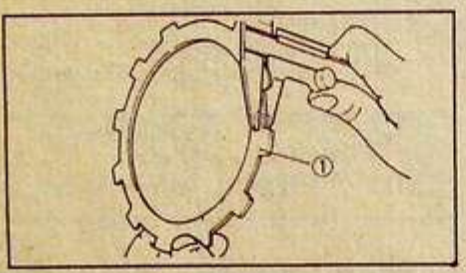
DO NOT CLEAN WITH PETROL

Clutch Boss

1. Inspect:
   - Clutch boss splines (2)
     Scoring/Wear/Damage → Deburr or replace.

NOTE:

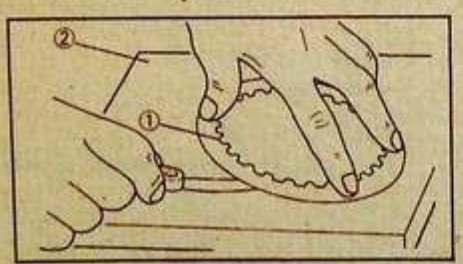
Scoring on clutch plate splines will cause erratic operation.



Friction Plate

1. Inspect:
   - Friction plates (1)
     Damage/Wear → Replace as a set
2. Measure:
   - Friction plate thickness
     Measure all at four points.
     Out of specification → Replace as a set.

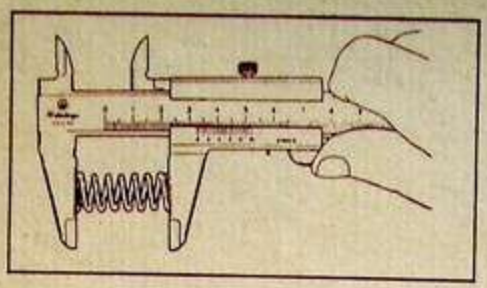
	Wear Limit: 2.7 mm



Clutch Plate

1. Measure:
   - Clutch plate (1) warpage
     Use surface plate (2) and feeler gauge.
     Out of specification → Replace.

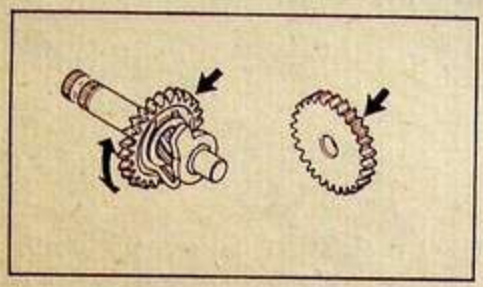
	Warp Limit: 0.05 mm



Clutch Spring

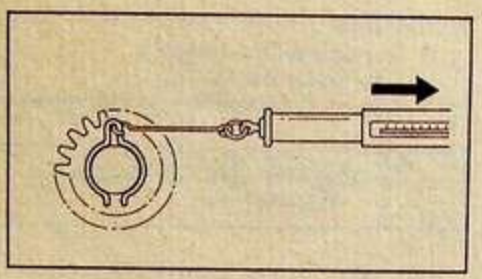
1. Measure:
   - Free length
     Out of specification → Replace as a set.

Minimum Length:
33 mm



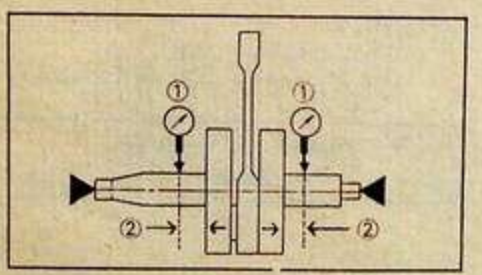
KICK STARTER

1. Inspect:
   - Kick gear teeth
   - Kick idle gear teeth
     Wear/Damage → Replace.
2. Check:
   - Kick gear movement



3. Measure:
   - Kick clip friction force
     Out of specification → Replace kick clip.

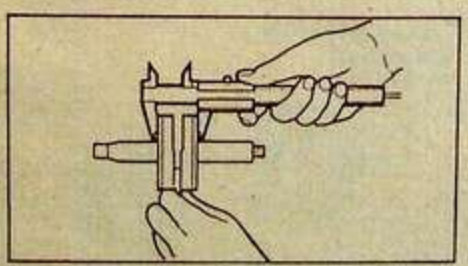
Kick Clip Friction Force:
0.8~1.2 kg



CRANKSHAFT

1. Measure:
   - Runout ①
     Use Dial Gauge ①
     Out of specification → Repair or replace.
     ② 7.5 mm

Runout Limit:
0.03 mm



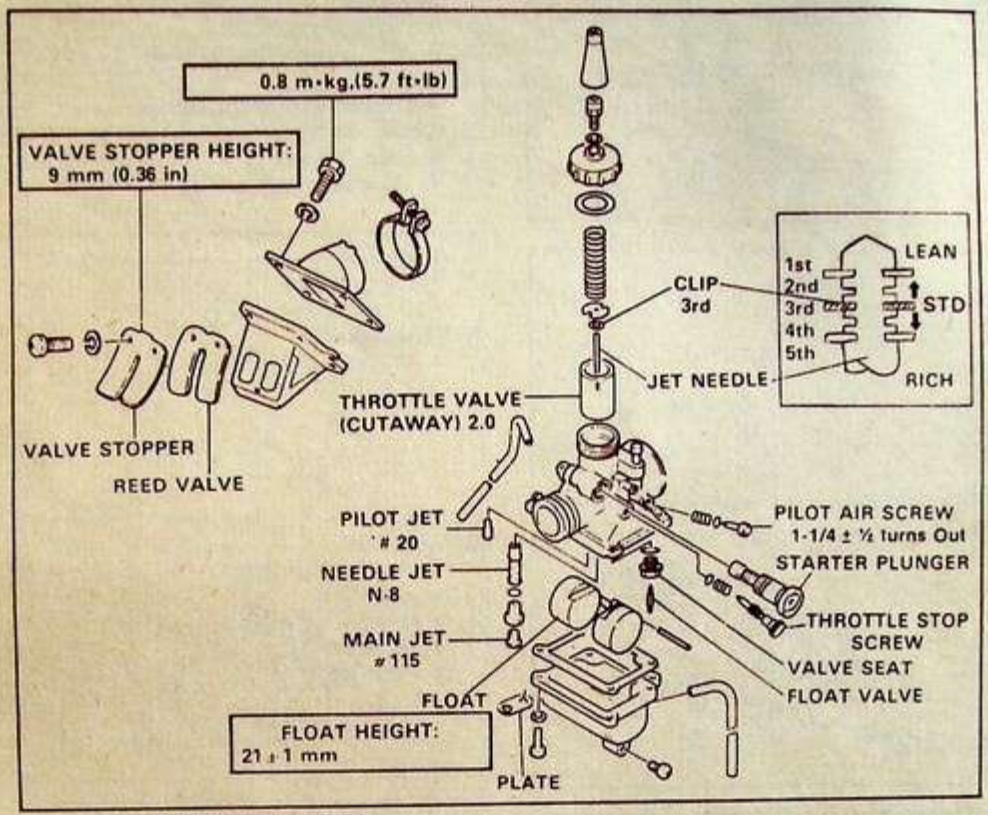
2. Measure:
   - Crank width
     Out of specification → Repair or replace.

Crank Width:
55.90~55.95 mm

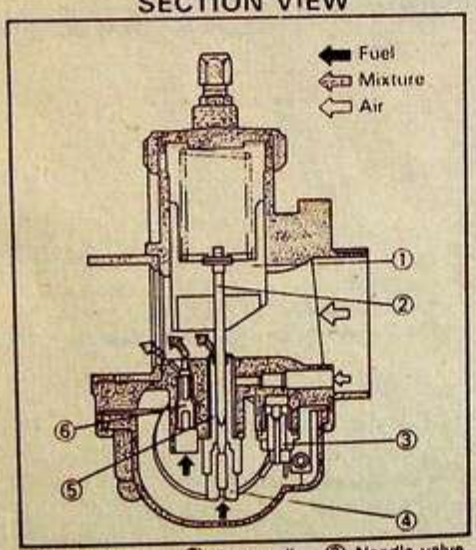
CHAPTER 4
CARBURETION

CARBURETTOR

CARBURETTOR

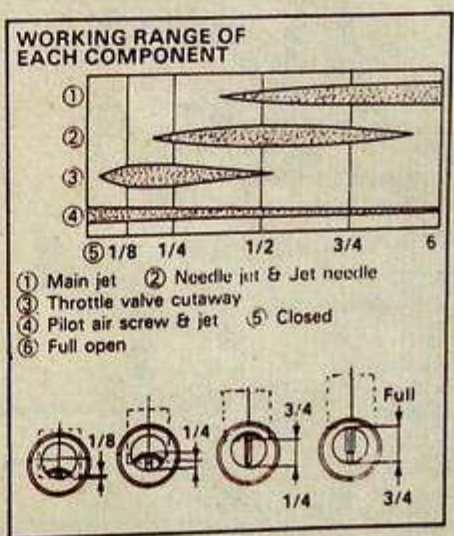


SECTION VIEW



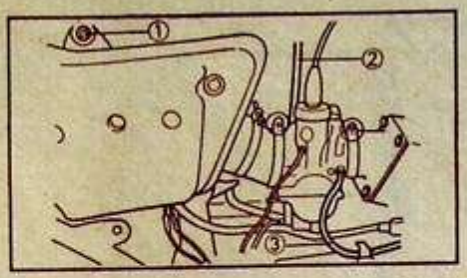
① Throttle valve ② Jet needle ③ Needle valve
④ Main jet ⑤ Needle jet ⑥ Pilot jet

WORKING RANGE OF EACH COMPONENT



① Main jet ② Needle jet & Jet needle
③ Throttle valve cutaway
④ Pilot air screw & jet ⑤ Closed
⑥ Full open

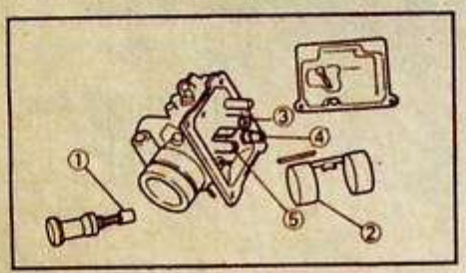
CARBURETTOR



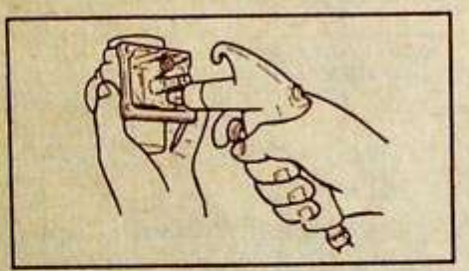
REMOVAL AND DISASSEMBLY

1. Remove:
   - Right side cover
   - Air cleaner case screws (1)
2. Loosen:
   - Carburettor joint screw
3. Disconnect:
   - Fuel hose (2)
   - Oil delivery hose (3)

4. Remove:
   - Carburettor
   - Carburettor top (1)
5. Disconnect:
   - Throttle cable (2)

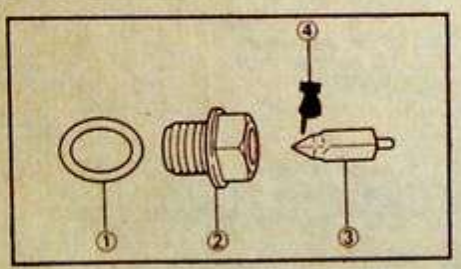


6. Remove:
   - Starter plunger (1)
   - Float (2)
   - Needle valve (3)
   - Main jet (4)
   - Pilot jet (5)



INSPECTION

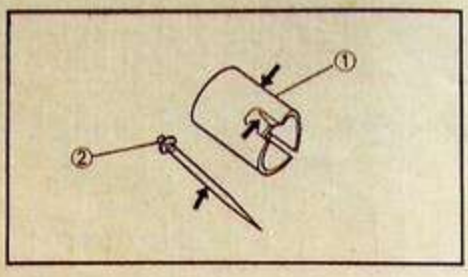
1. Using high pressure air, blow out all passages and jets.



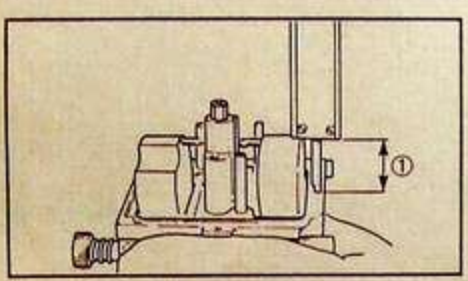
2. Inspect:
   Needle valve
   Damaged or worn → Replace as a set.

(1) Gasket
(2) Valve seat
(3) Needle valve
(4) Check here.

CARBURETOR



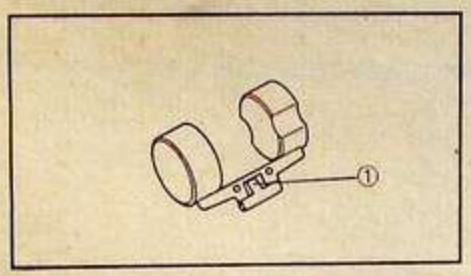
3. Inspect:
   - Throttle valve ①
   - Jet needle ②
     Scratch/Bent → Replace.



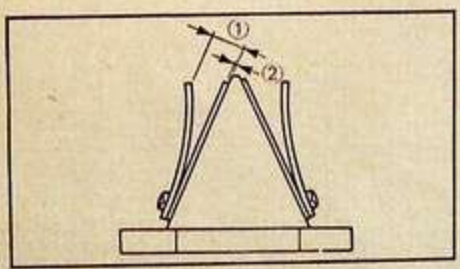
2. Measure:
   - Float height ① Without Gasket
     Incorrect → Adjust

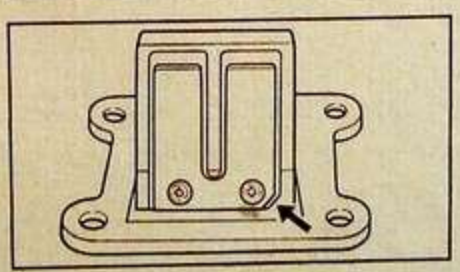
Float Height:
21.0 – 1.0 mm

NOTE:
The float should be just resting on, but not depressing, the spring loaded inlet needle.



5. Adjust:
   - Float height
     by bending the tang ①





REED VALVE

INSPECTION

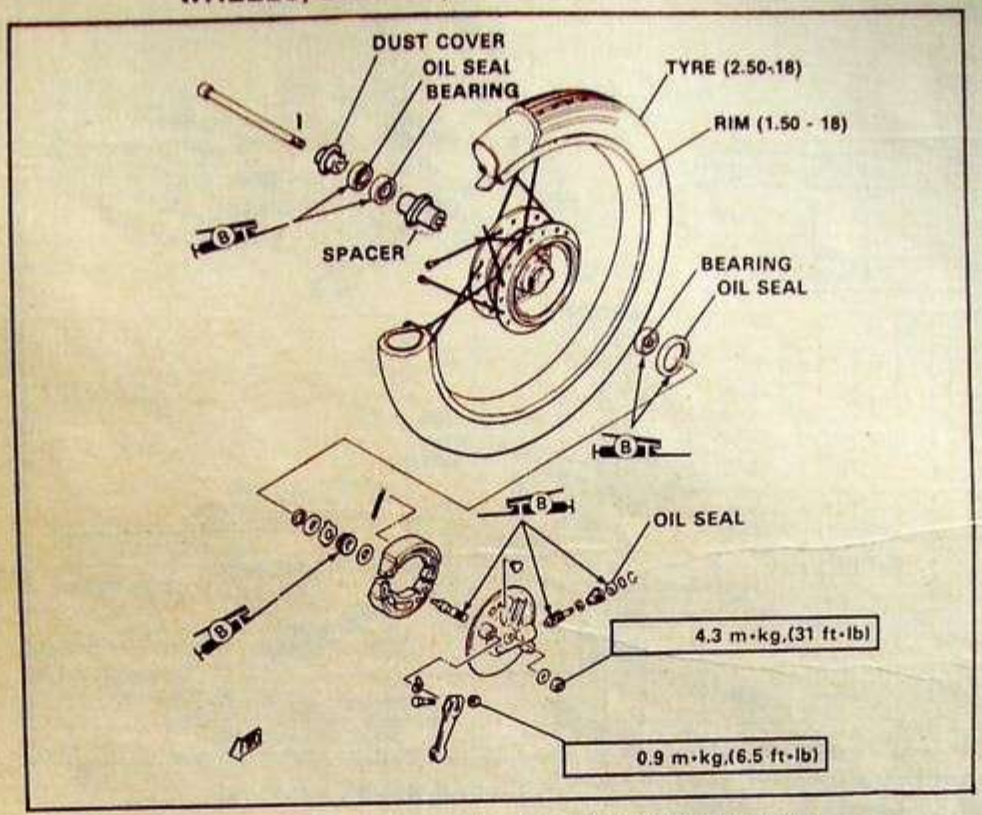
1. Measure:
   - Valve stopper height ①
     Out of specification → Adjust.
   - Reed valve bending ②
     Out of specification → Replace.

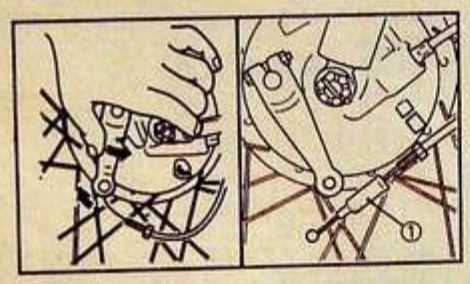
Valve Stopper Height:
9 mm
Reed Valve Bending Limit:
0.3 mm

NOTE:
Note the cut in the lower corner of the reed and stopper plate.

CHAPTER 5
CHASSIS

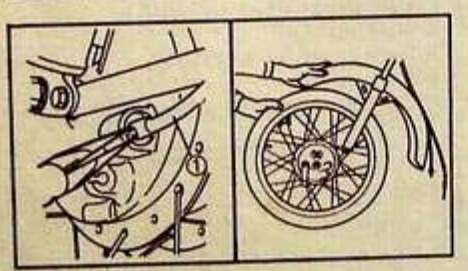
WHEELS, BRAKES, SPROCKETS AND CHAIN



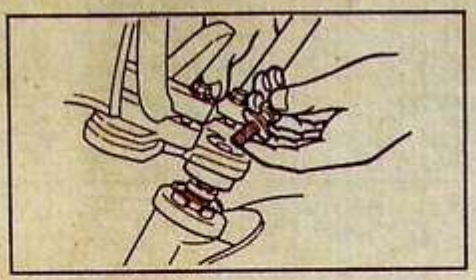


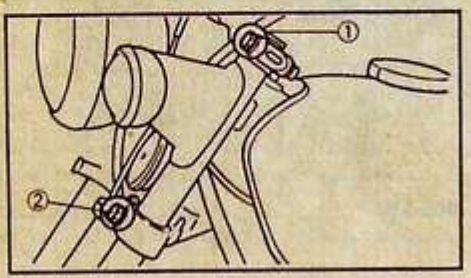
FRONT WHEEL REMOVAL

1. Place a suitable stand under the engine.
2. Disconnect:
   - Brake cable ①



3. Disconnect:
   - Speedometer cable ①
4. Remove:
   - Cotter pin
   - Axle nut
   - Axle shaft
   - Front wheel





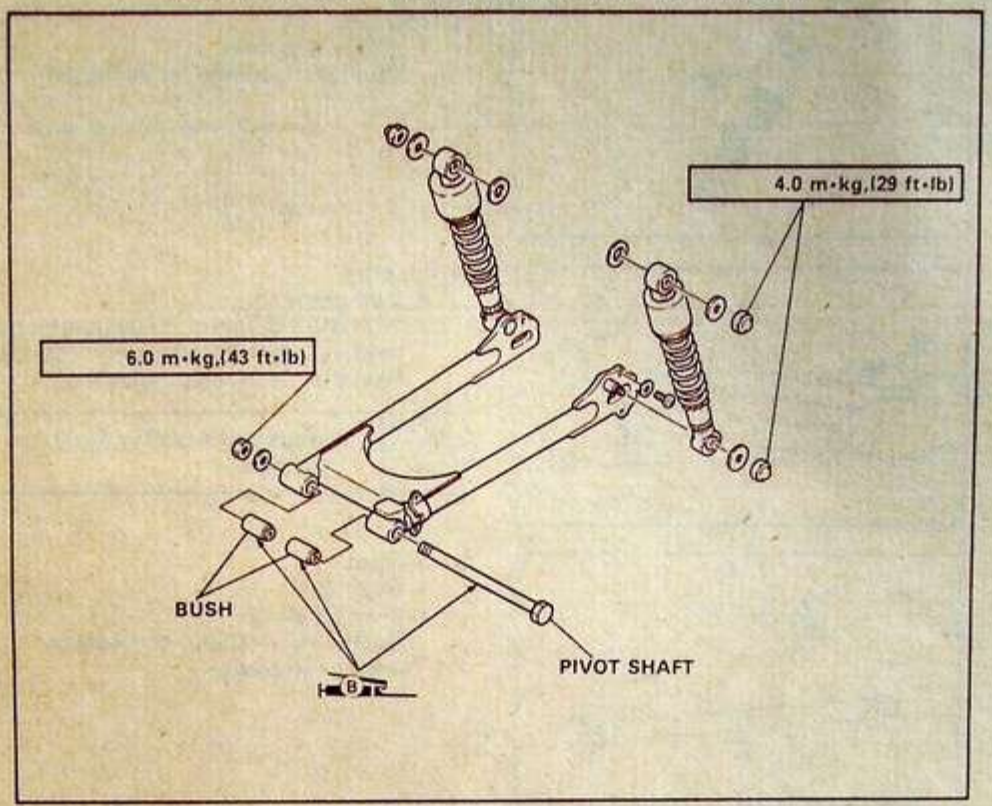
4. Install:
   - Front forks
   - Handle crown
   - Steering fitting bolt

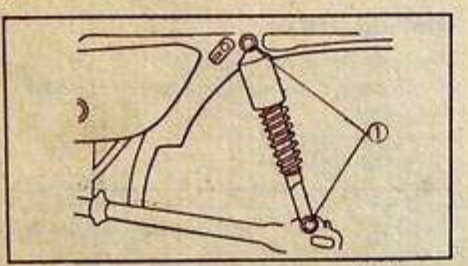
	Fitting Bolt: 4.0 m•kg,(29 ft•lb)

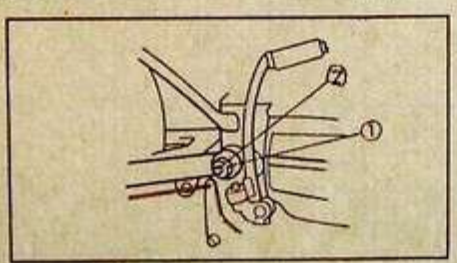
5. Tighten:
   - Inner tube pinch bolts

	Inner Tube Pinch Bolt: **Upper ① : 1.5 m.kg, (11 ft.lb)** **Lower ② : 3.0 m.kg, (22 ft.lb)**

REAR SHOCK ABSORBER AND SWINGARM



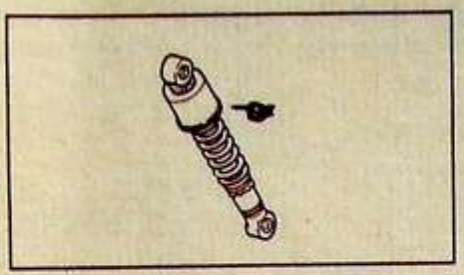




REMOVAL

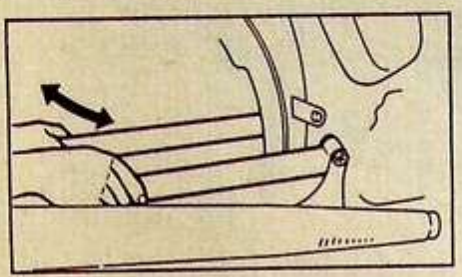
1. Remove:
   - Rear wheel
   - Chain case
   - Driven sprocket
   - Drive chain
2. Remove:
   - Shock absorber mount bolts (1)
   - Shock absorbers
3. Remove:
   - Pivot shaft nut (1)
   - Pivot shaft (2)
   - Swingarm

REAR SHOCK ABSORBER AND SWINGARM



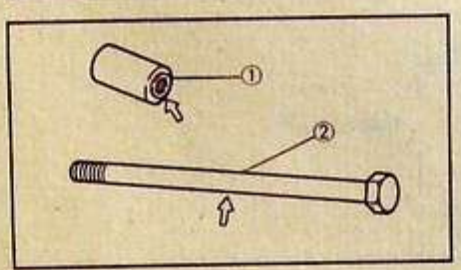
INSPECTION

1. Inspect:
   - Shock absorber
     Oil leaks/Damage → Replace.

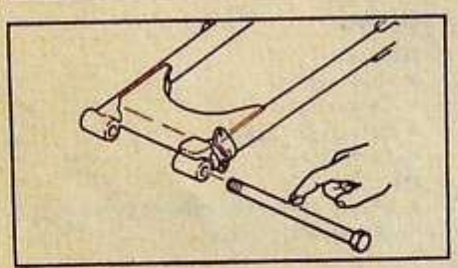


2. Inspect:
   - Swingarm
     With the swingarm installed grasp the swingarm end to check for free play.
     Free play → Replace bushes.

	Swingarm Free Play Limit: 2.0 mm



3. Inspect:
   - Bush ①
   - Pivot Shaft ②
     Rust/Dirty → Clean or Replace.
     Bent → Replace



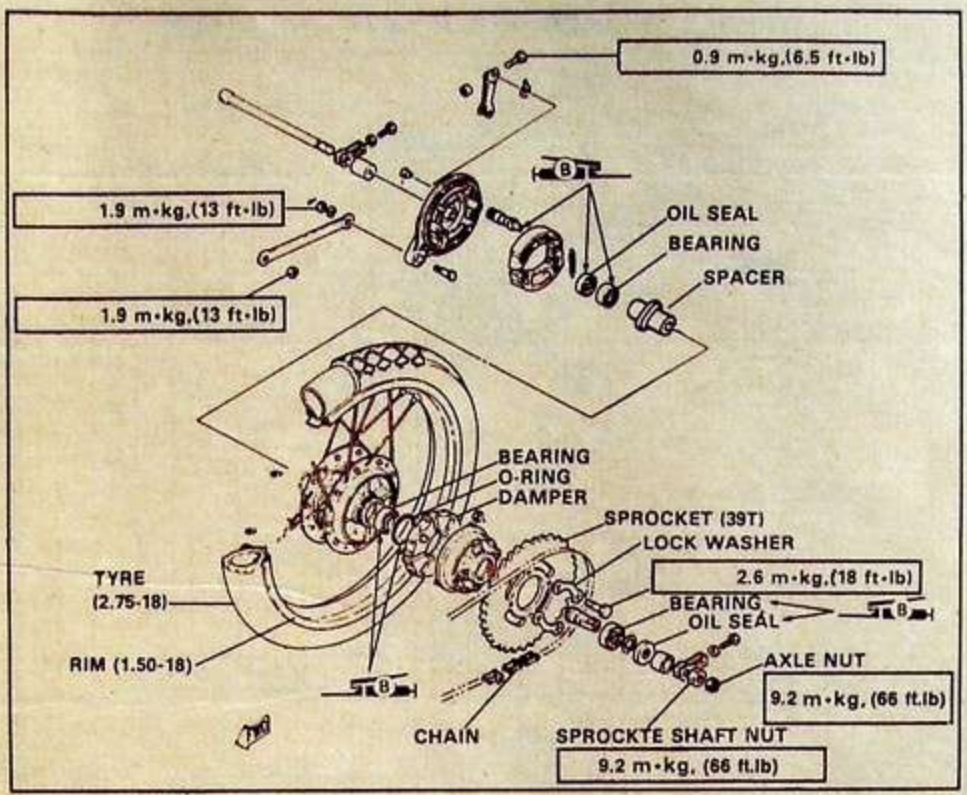
INSTALLATION

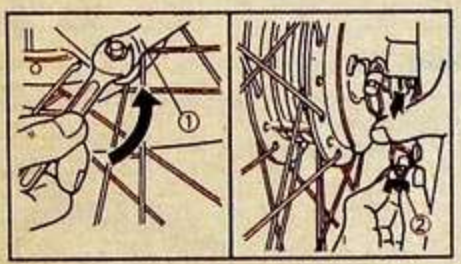
Reverse removal steps.

1. Grease the bushes and pivot shaft.
2. Install:
   - Swingarm
   - Pivot shaft

	6.0 m·kg,(43 ft·lb)

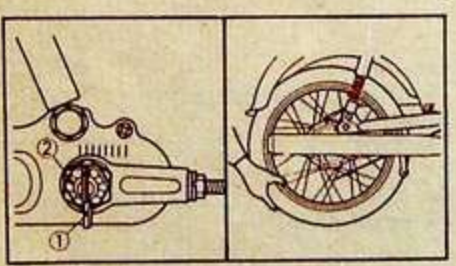
WHEELS, BRAKES, SPROCKETS AND CHAIN



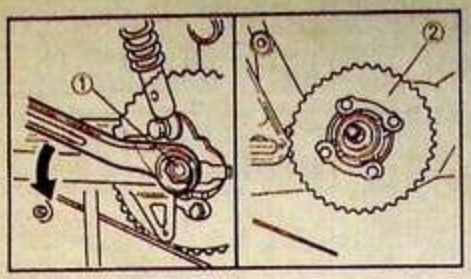


REAR WHEEL REMOVAL

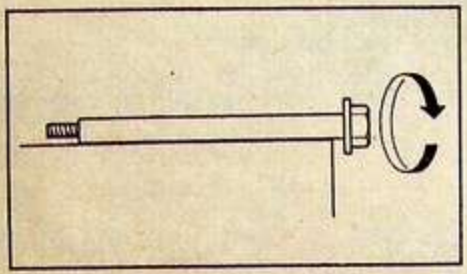
1. Place the motorcycle on its centerstand.
2. Remove:
   - Brake tension bar ①
   - Brake rod ②



3. Remove:
   - Cotter pin ①
   - Axle nut ②
   - Axle shaft
   - Rear wheel

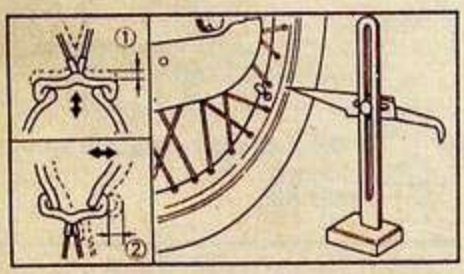


4. Remove:
   - Chain case
   - Sprocket shaft nut ①
   - Sprocket assembly ②
   - Drive chain



INSPECTION

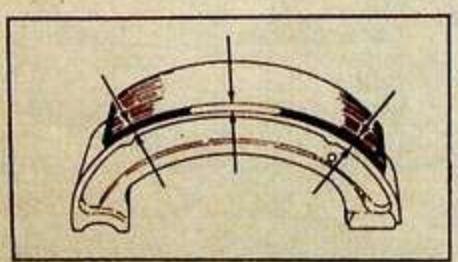
1. Inspect:
   - Axle shaft
     Roll the axle shaft on a Flat Surface.
     Bends → Replace.



2. Inspect:
   - Wheel
     Cracks/Heavily Bends → Replace.
3. Measure:
   - Wheel runout
     Out of specification → Retighten or Replace.

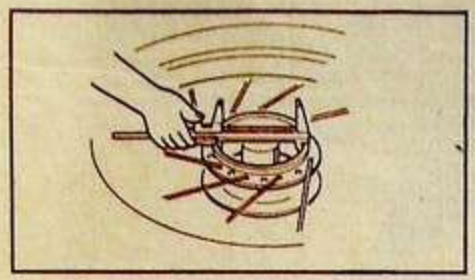
Rim Runout Limits:
Radial ① — 2.0 mm
Lateral ② — 2.0 mm

4. Inspect:
   - Wheel bearings
     Bearings allow play in the wheel hub or wheel turns roughly → Replace.



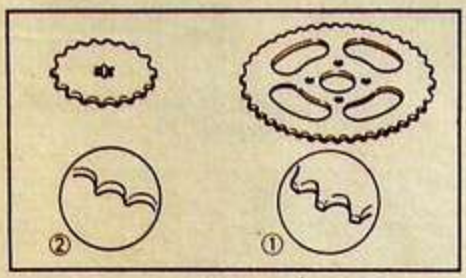
5. Measure:
   - Brake shoe thickness
     Out of specification → Replace.

Brake Shoe Wear Limit:
2 mm



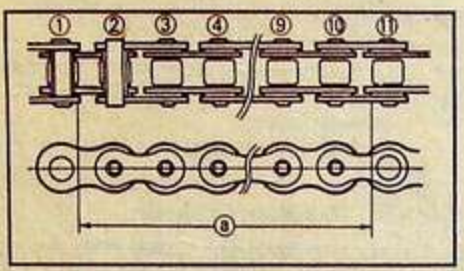
6. Measure:
   • Brake drum inside diameter
   Out of specification → Replace.

Brake Drum Wear Limit:
131 mm



7. Inspect:
   • Drive sprocket
   • Driven sprocket
   Wear → Replace with the chain as a set.

① Good
② No Good



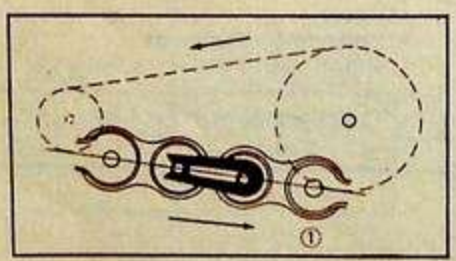
8. Measure:
   • Drive chain length (10 Links) ⓐ
   Out of specifiction → Replace.

Drive Chain Length (10 Links)
Limit:
121 mm

INSTALLATION

1. Install:
   • Wheels
   Reverse removal steps.

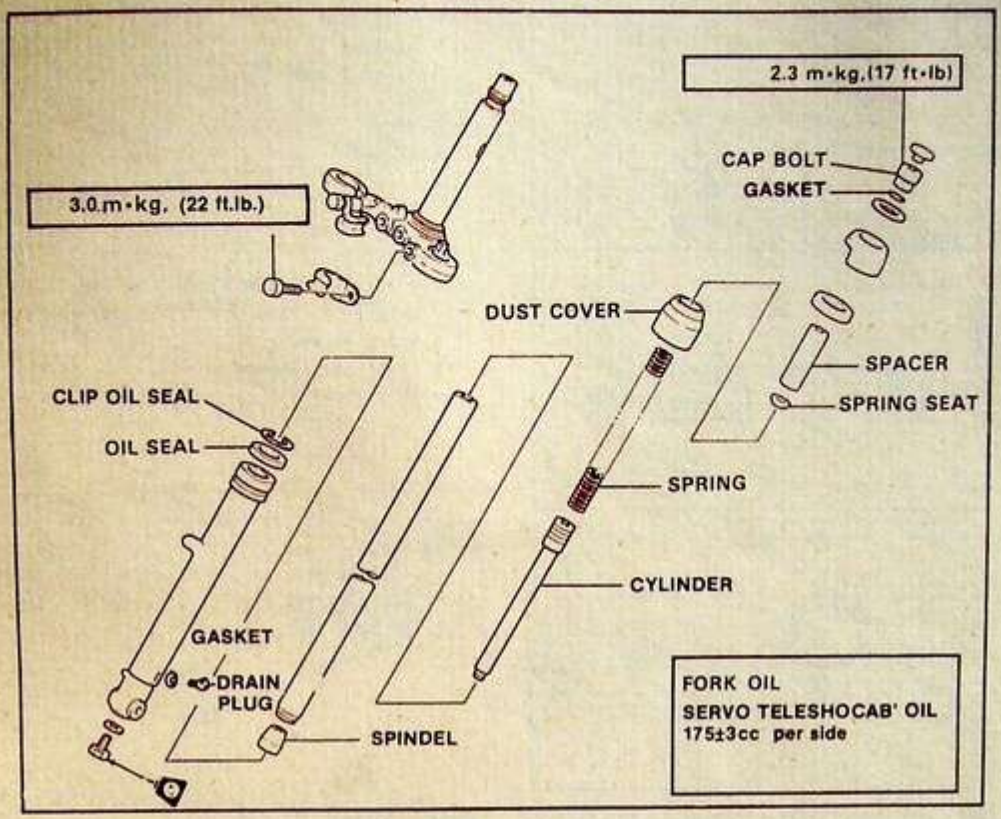
Note the following installation points:
- Lightly grease the wheel oil seal lips and gear teeth of the speedometer drive and driven gears.
  (Use lightweight, lithium base grease.)
- Be sure that the torque stopper is positioned correctly.
- Install the chain clip with rounded end facing the direction of travel.

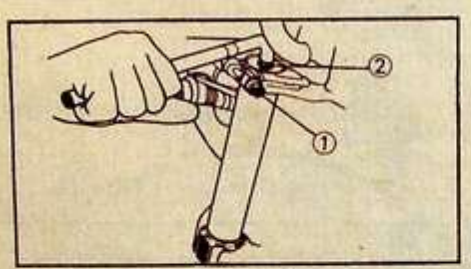


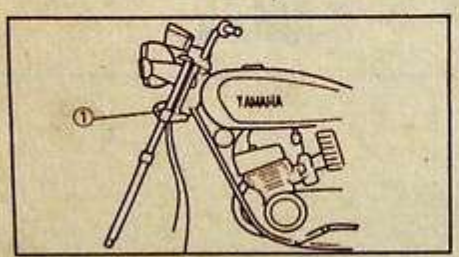
① Drive direction

FRONT FORK

FRONT FORK



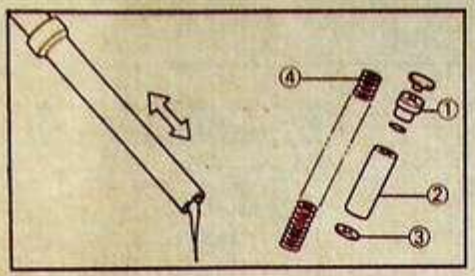




REMOVAL

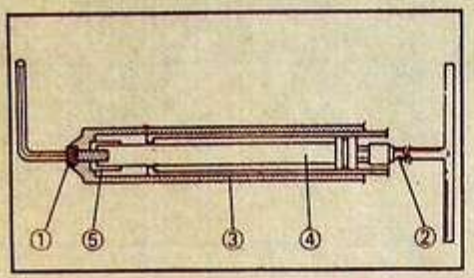
1. Remove:
   - Front wheel
   - Front fender
2. Loosen:
   - Front fork pinch bolt ①
   - Cap bolt ②
     Use Top Plug Spanner (ESM-100000214) ③
3. Loosen:
   - Front fork pinch bolt (Lower) ①
4. Remove:
   - Front fork

FRONT FORK

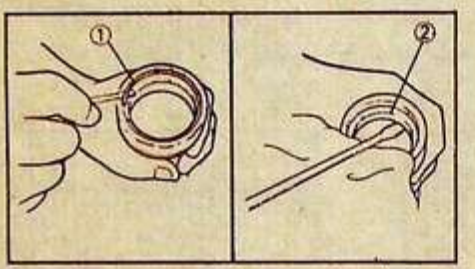


DISASSEMBLY

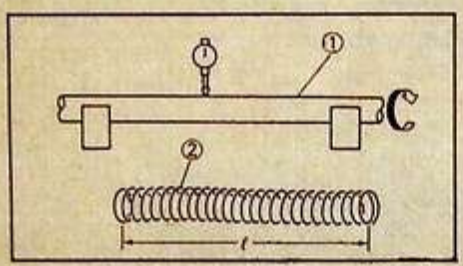
1. Remove:
   - Cap bolt ①
   - Spacer ②
   - Spring seat ③
   - Spring ④
2. Drain:
   - Fork oil



3. Remove:
   - Bolt Hex Sockethead rod securing bolt ①
     Use T-Handle ②.(ESM-100000213)
   - Inner tube ③
   - Cylinder Complete ④
   - Spindle ⑤



4. Remove:
   - Dust cover
   - Clip Oilseal ①
   - Oil seal ②

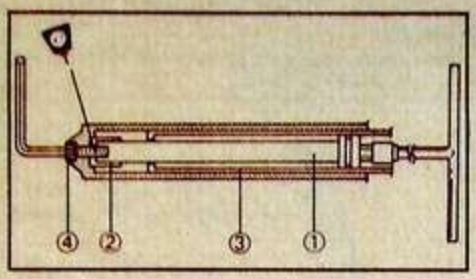


INSPECTION

1. Inspect:
   - Inner tube ①
   - Outer tube
     Scratches/Bends/Damage → Replace.
2. Measure:
   - Fork spring ②
     Out of specification → Repalce.

Fork Spring Free Length:
296.5 mm
Limit 291.5 mm

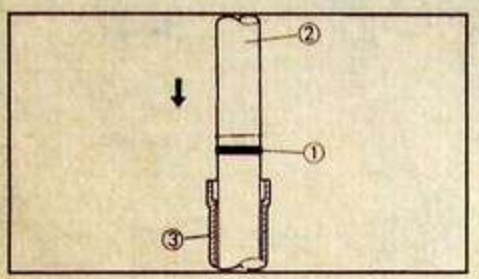
FRONT FORK



ASSEMBLY

1. Install:
   - Cylinder Complete ①
   - Spindle ②
   - Inner tube ③
   - Bolt Hex Socket Hd ④

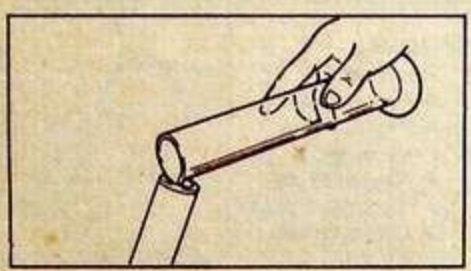
Cylinder Comp.
2.3 m.kg. (17 ft.lb)
LOCTITE OR EQUIVALENT.



2. Install:
   - Oil seal ①
   - Clip oilseal
   - Dust cover

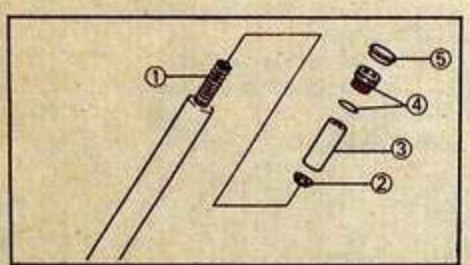
② Inner tube

③ Outer tube



3. Fill:
   - Front fork

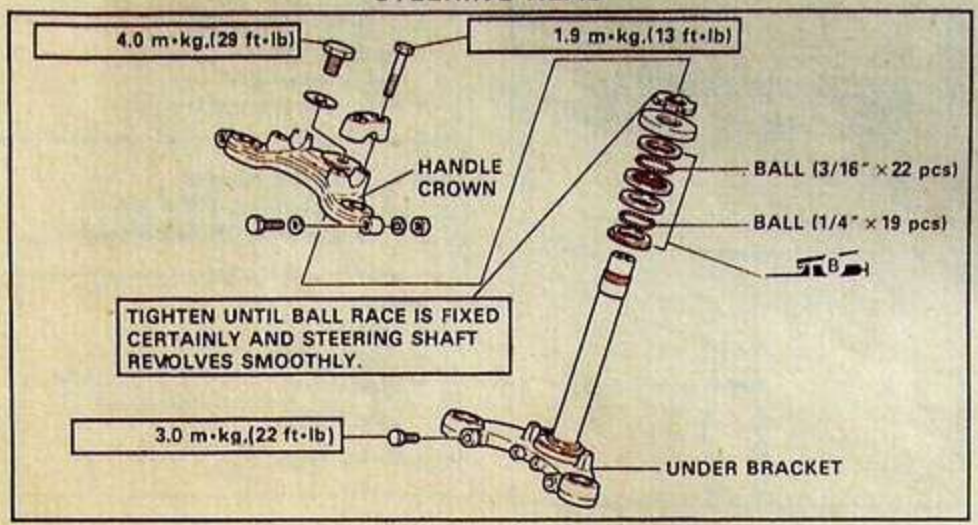
Each Fork:
175 ± 3cc
SERVO TELESHOCAB' OIL



4. Install:
   - Fork spring ①
   - Spring seat ②
   - Spacer ③
   - Cap bolt ④
   - Rubber cap ⑤
5. After installing the front fork, tighten the cap bolt.

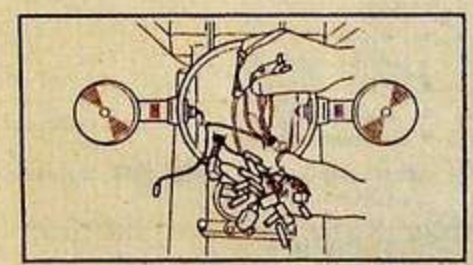
Cap Bolt:
2.3 m.kg, (17 ft.lb)

STEERING HEAD

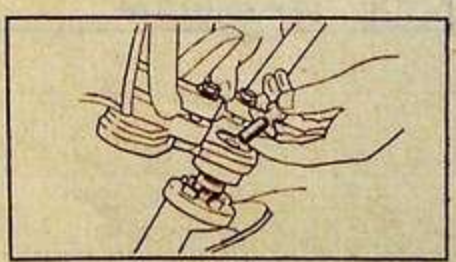


REMOVAL

1. Remove:
   - Front wheel
   - Front forks
2. Disconnect:
   - Brake cable
   - Throttle cable
   - Cluth cable

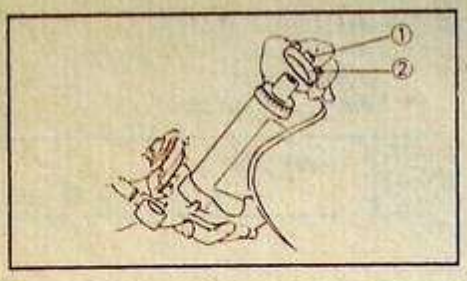


3. Disconnect:
   - Electrical lead wires (in the headlight case)
4. Remove:
   - Headlight



5. Remove:
   - Steering fitting bolt
   - Handle crown assembly
   - Headlight stays (together with headlight case)

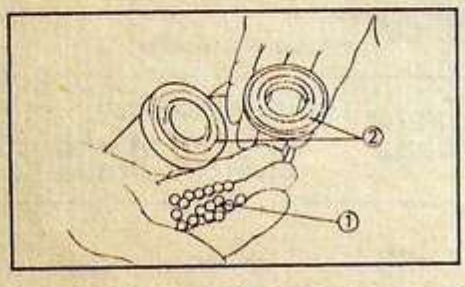
STEERING HEAD



6. Remove:
   - Forkstem nut ①
   - Bearing cover ②

NOTE:
Support the under bracket not to lose any bearings.

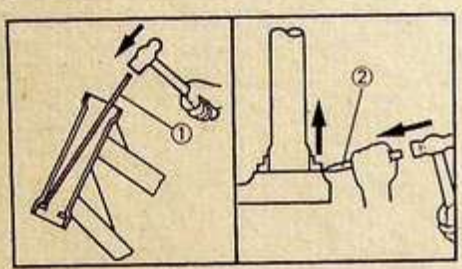
- Under bracket
- Bearings



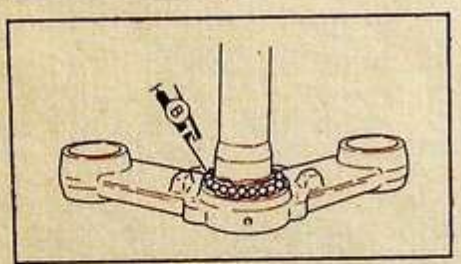
INSPECTION

1. Wash the bearings in solvent.
2. Inspect:
   - Bearings ①
     Pitting/Damage → Replace.
   - Bearing races ②
     Pitting/Damage → Replace.

NOTE:
Always replace bearing and race as a set.

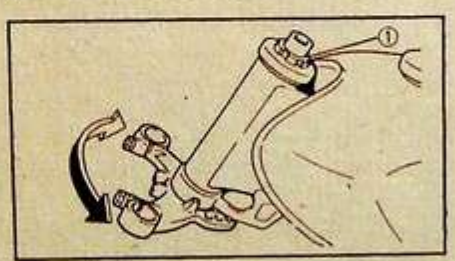


3. When replacing the bearing, use a long rod ① and cold chisel ② to remove the race.



INSTALLATION

1. Grease the bearings and races.

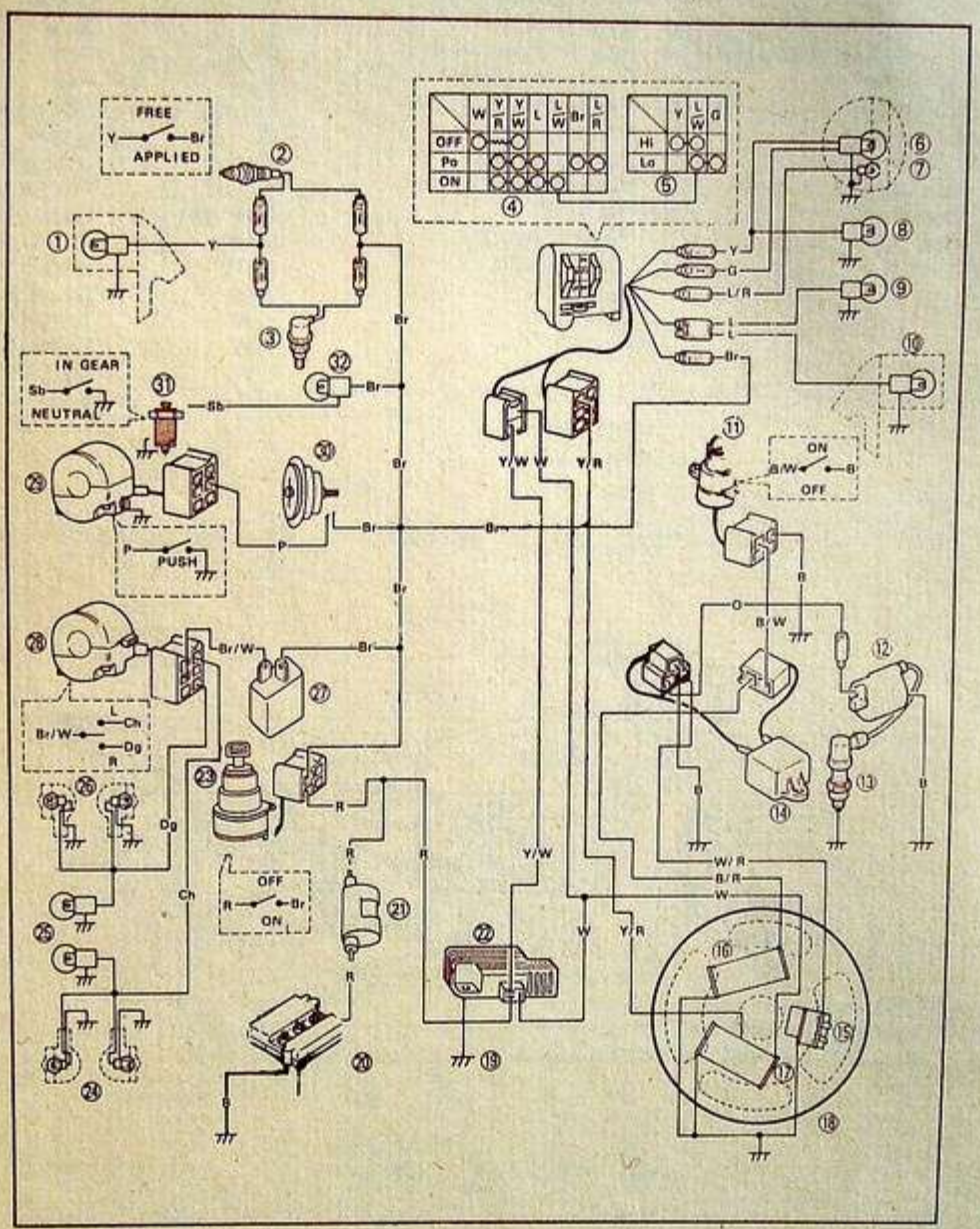


2. Install:
   - Under bracket
   - Bearing cover
   - Ring nut
3. Tighten:
   - Ring nut ①
     (so all free play is taken up, but so the bracket can still pivot freely.)

CHAPTER 6
ELECTRICAL

CIRCUIT DIAGRAM

Additional electrical accessories may overload the existing electrical system. Severe overloads may damage the wiring harness or create a dangerous situation due to the loss of electrical power during the operation of the motorcycle.

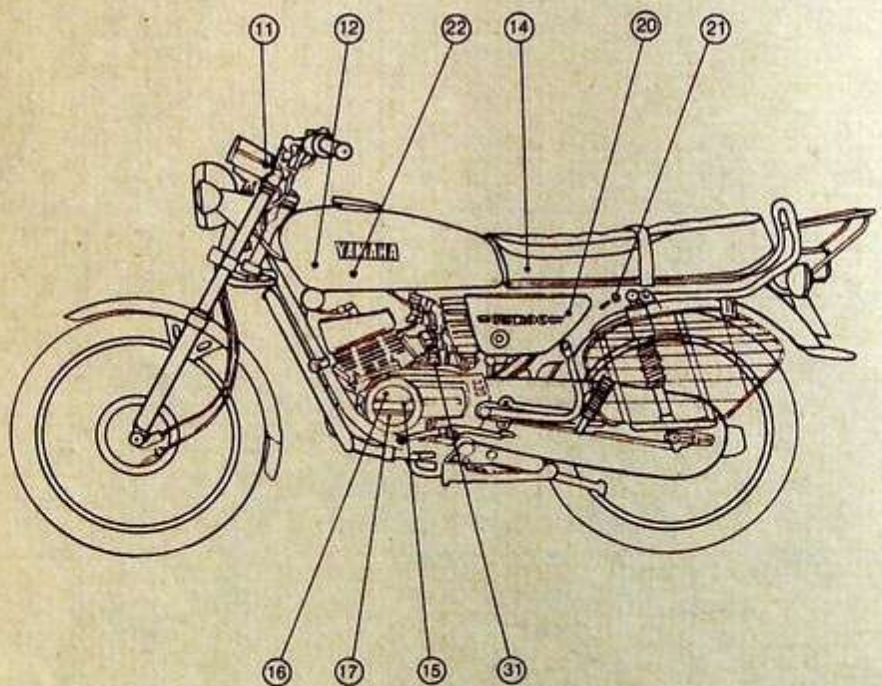


CIRCUIT DIAGRAM

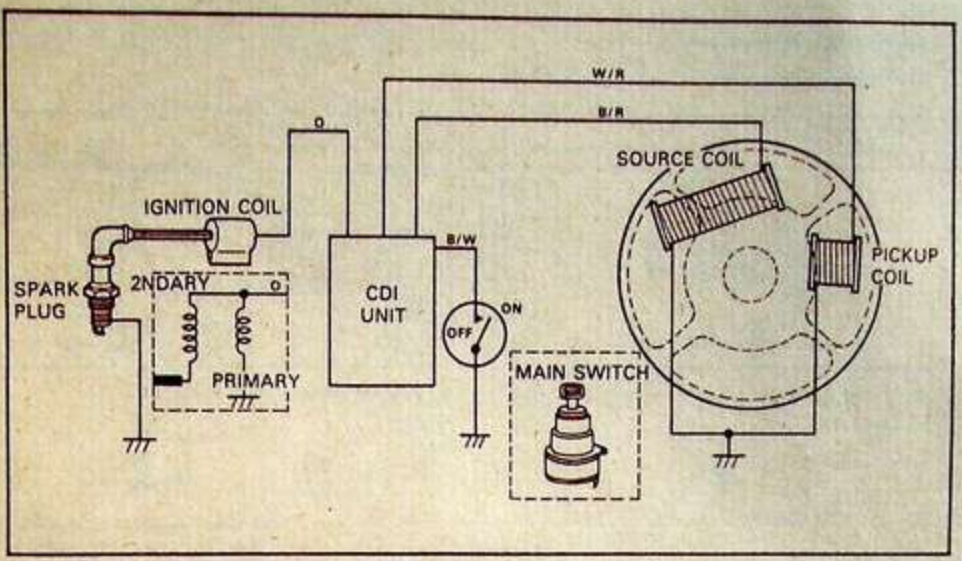
1 Brake light
2 Front brake switch
3 Rear brake switch
4 Light switch
5 Dimmer switch
6 Headlight
7 Park light
8 'HIGH BEAM" indicator
9 Meter light
10 Tail light
11 Main switch
12 Ignition coil
13 Spark plug
14 CDI unit
15 Pulsar coil
16 Source coil
17 Charge/lighting coil
18 C.D.I. magneto
19 Body earth
20 Battery
21 Fuse
22 Rectifier/Regulator
23 Main switch
24 Flasher lights (left)
25 Flasher pilot light
26 Flasher lights (right)
27 Flasher relay
28 Flasher switch
29 Horn switch
30 Horn
31 Neutral switch
32 Neutral light

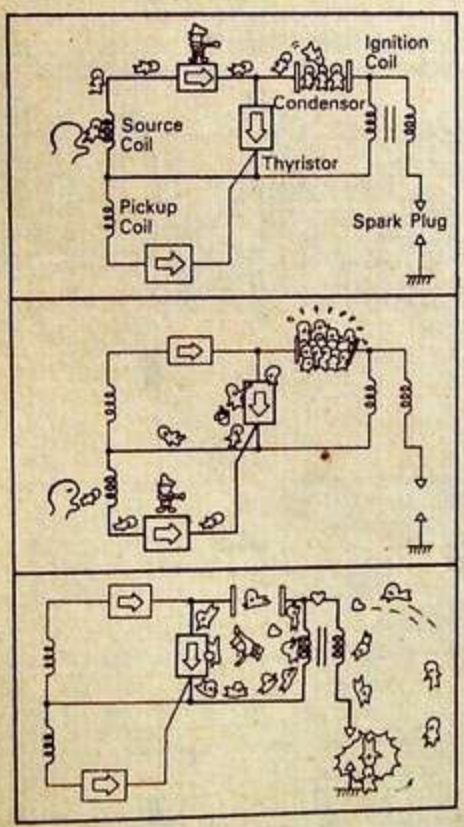
COLOR CODE

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



IGNITION SYSTEM





FUNCTION

Function No. 1

As the rotor turns, current is produced in the source coil and then stored in the ignition condensor.

Function No.2

At the same time, the pickup coil sends a pulse (signal) to activate the thyristor.

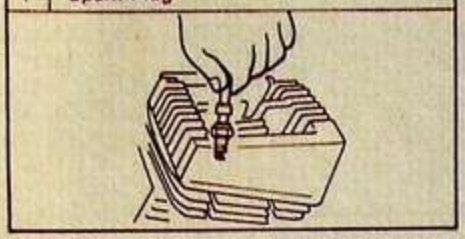
Function No.3

Then, the ignition condenser discharges the stored current rapidly. This induces a high voltage in the ignition coil, and a strong spark is produced.

TROUBLESHOOTING CHART

All wires connection must be checked in advance.

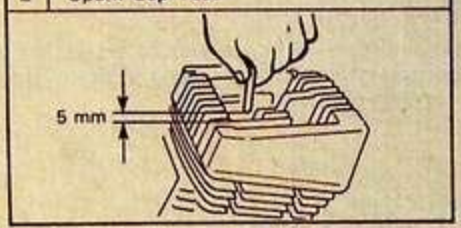
1 Spark Plug



Ground the spark plug to the cylinder head and kick the starter.

No spark or weak spark ⬇

2 Spark Gap Test



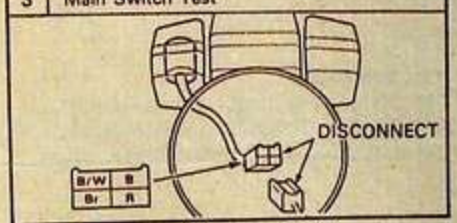
Hold the ignition lead 5 mm from the cylinder head and kick the starter.

No spark ⬇

⇩ Spark

Check the plug cap and spark plug

3 Main Switch Test



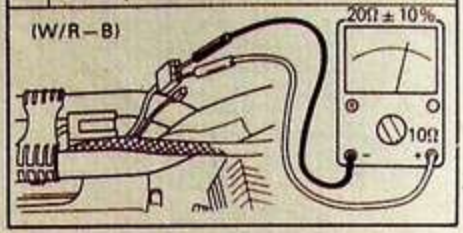
Disconnect the main switch coupler and kick the starter.

No spark ⬇

⇩ Spark

Check main switch

4 Pickup Coil Check



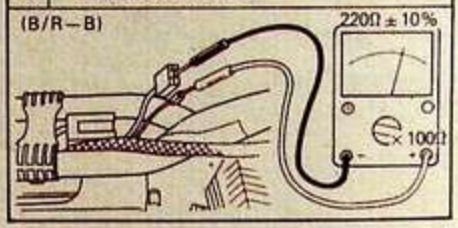
Check the pickup coil resistance.

OK ⇩

⬇ NG

Replace the pickup coil

5 Source Coil Check



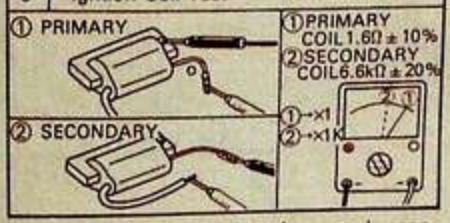
Check the source coil resistance.

OK ⇩

⬇ NG

Replace the source coil

6 Igntion Coil Test



Check the resistance of the primary and secondary coil windings.

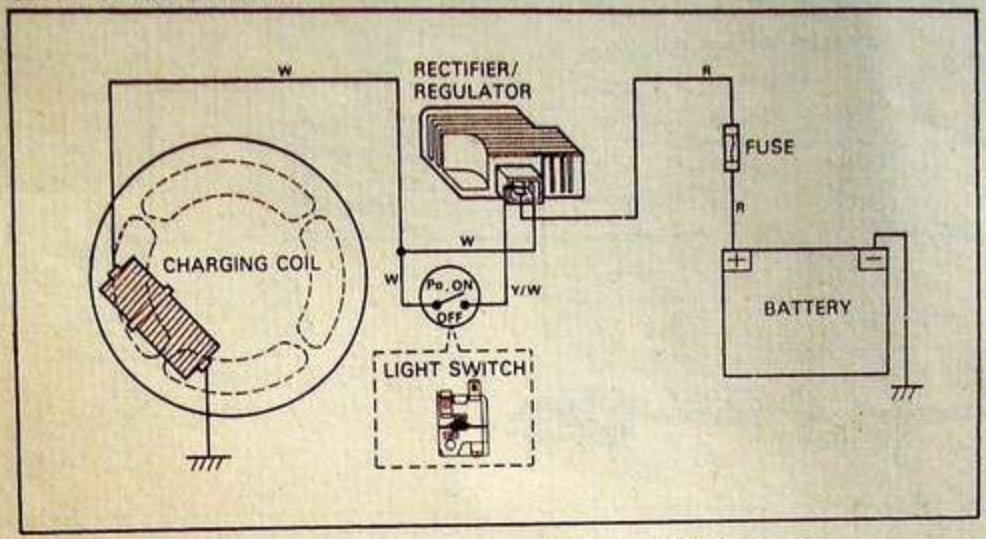
OK ⇩

Replace the CDI unit

⬇ NG

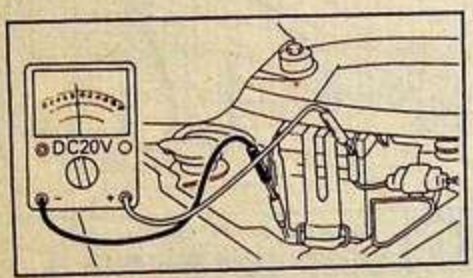
Replace the ingition coil

CHARGING SYSTEM



1. Charging Voltage Test

Connect the tester leads with battery terminals as shown. Start the engine and check voltage.

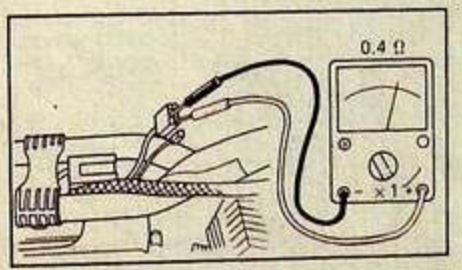


Charging Voltage: (Day)
7.5~8.0V at 5,000 r/min

If out of specifications, check charging coil windings resistance. And if more than 9V, replace the Rectifire/Regulator.

2. Charging Coil Resistance

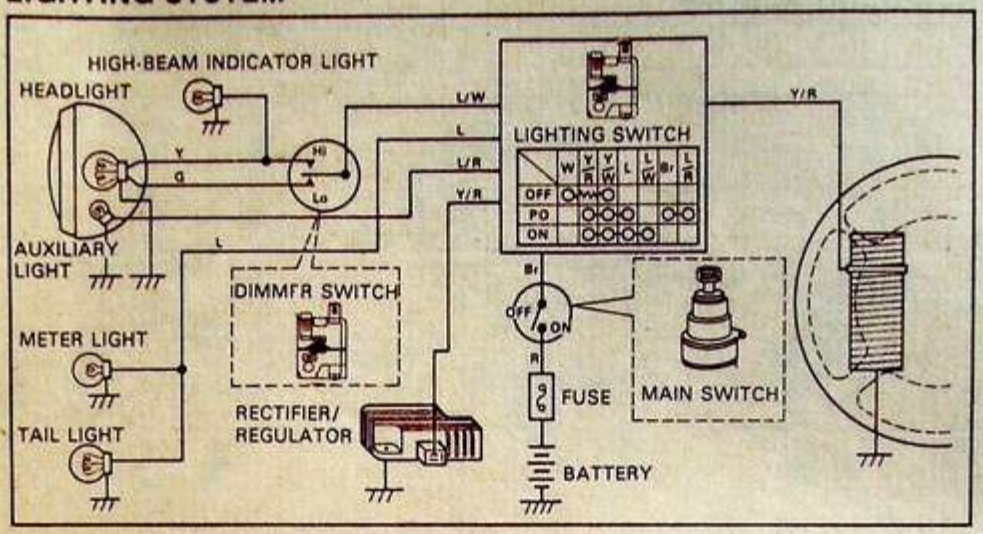
Disconnect the generator leads and check charging coil windings resistance.



Charging Coil Resistance:
0.4 Ω ± 10%
(White – Black)

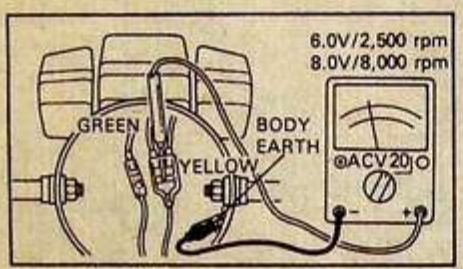
If out of specification, replace charging coil.

LIGHTING SYSTEM



1. Lighting Voltage Test

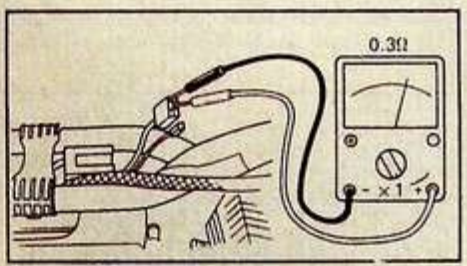
Remove the headlight leads and connect the teser leads as shown. Start the engine and check the voltage.



Lighting Voltage
(Yellow-Ground) or (Green—Ground) 6.0V or more at 2,500 r/min 8.0V or less at 8,000 r/min

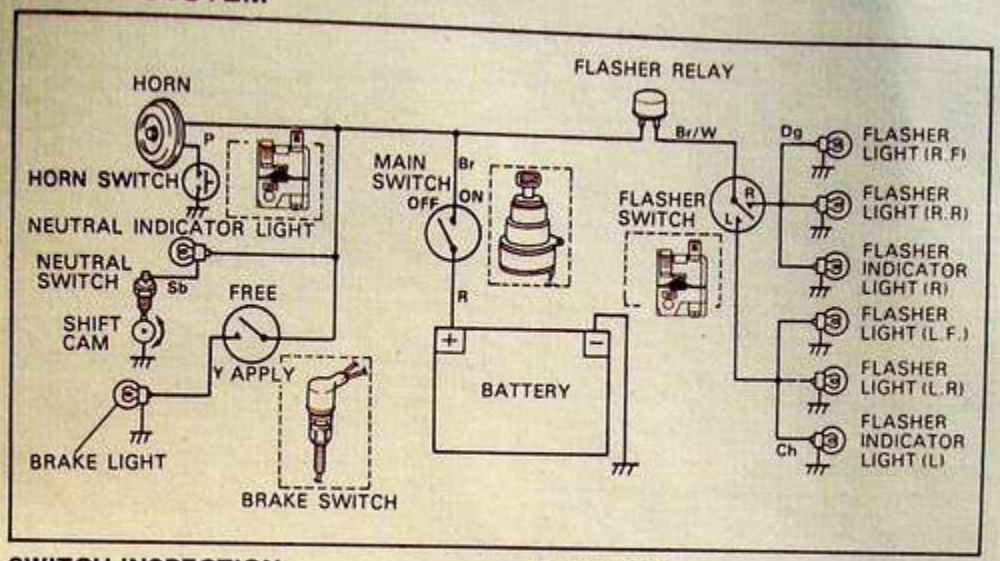
If out of specifications, check lighting coil resistance and rectifier/regulator.

2. Lighting Coil Resistance

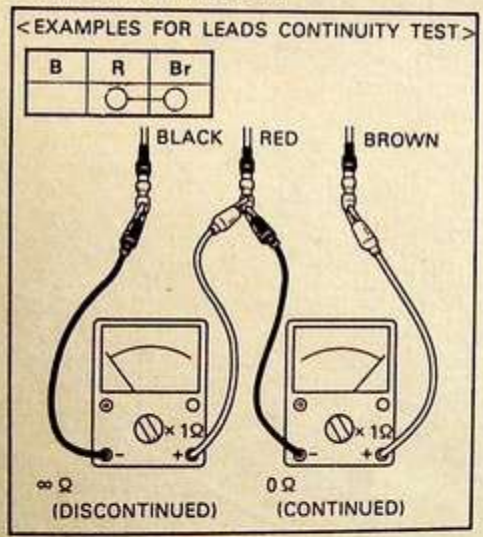


Lighting Coil Resistance
0.3Ω ± 10% (Yellow/Red—Black)

SIGNAL SYSTEM

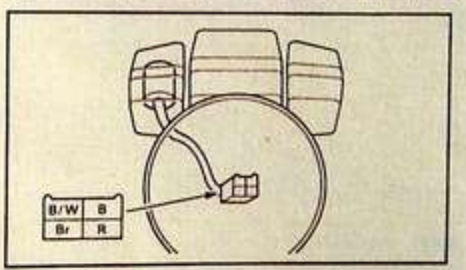


SWITCH INSPECTION



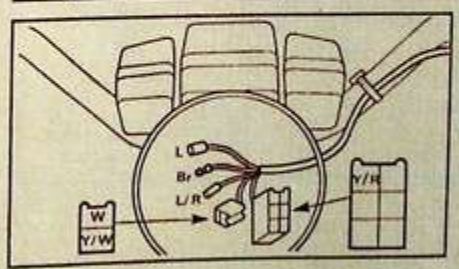
Main switch

	B	B/W	R	Br
OFF ⊘	○	○		
ON ⊕			○	○



Light switch

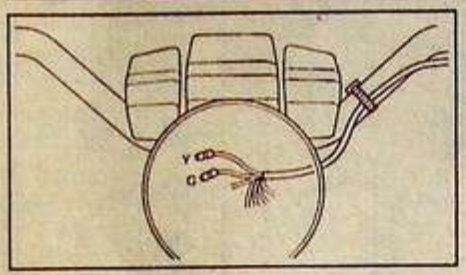
	W	Y/R	Y/W	L	L/W	Br	L/R
OFF	○		○				
PO		○	○	○		○	○
ON		○	○	○	○		



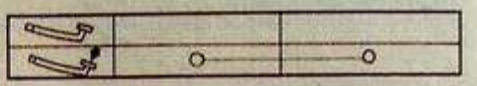
SIGNAL SYSTEM

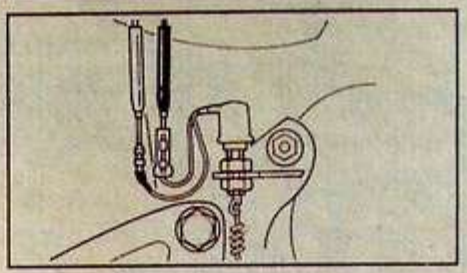
Dimmer switch

		G	L/W	Y
Hi	≡D		○	○
Lo	≡D	○	○	



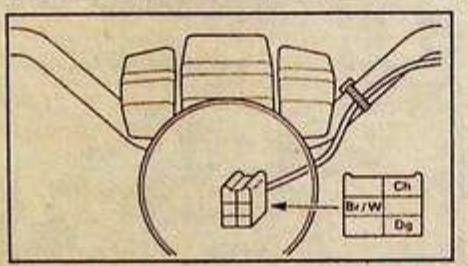
Brake switch





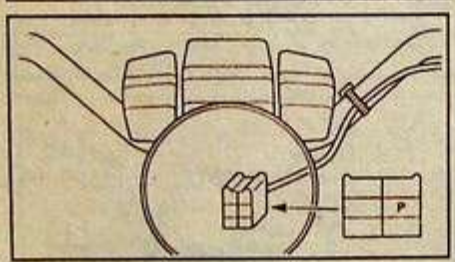
Flasher switch

		Ch	Br/W	Dg
R	▶		○	○
N	•			
L	◀	○	○	



Horn switch

	P	
■		
◻	○	○



CHAPTER 7
APPENDICES

SPECIFICATIONS

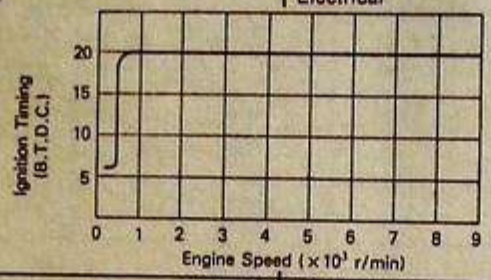
SPECIFICATION

A. GENERAL SPECIFICATIONS

Model	RX 100
Model Code Number	1L1
Frame Starting Number	1L1-000001
Engine Starting Number	1L1-000001
Dimensions: Overall Length Overall Width Overall Height Seat Height Wheelbase Minimum Ground Clearance	 2040 mm 740 mm 1,050 mm 765 mm 1,240 mm 145 mm
Basic Weight: With Oil and Full Fuel Tank	 103 kg
Minimum Turning Radius	2,100 mm
Engine: Engine Type Cylinder Arrangement Displacement Bore × Stroke Compression Ratio Max. Power Starting System	 Air cooled, 2-stroke, gasoline 7 port torque induction Single cylinder, Forward-inclined 98 cm³ 50 × 50 mm 6:7 : 1 11.0 PS @ 7,500 RPM Kick Starter
Lubrication System:	Separate lubrication (Yamaha Autolube Patent)
Oil Type or Grade: Engine Oil Transmission Oil	 Servo 2T Supreme or equivalent Servo super 30 or equivalent
Oil Capacity: Oil Tank (Engine Oil) Transmission Oil Periodic Oil Change Total Amount	 1.3 L 0.65 L 0.70 L
Air Filter	Wet foam (Washable)
Fuel: Type Tank Capacity	 Regular gasoline (87 Octane) 10.5 L
Carburettor: Type/Manufacturer	 VM20/MIKUNI
Spark Plug: Type/Manufacturer Gap	 BP7HS/NGK of Equivalent 0.7 — 0.8 mm
Clutch Type	Wet, multiple-Disc

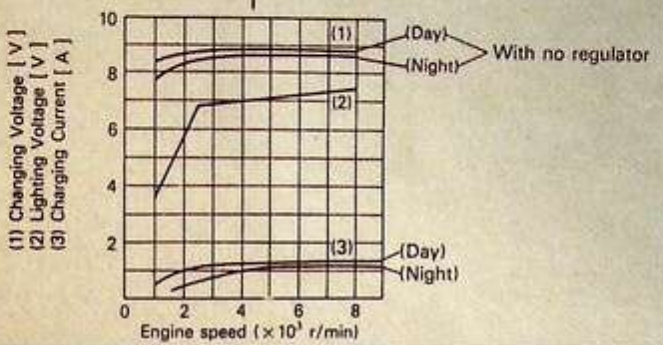
C. ELECTRICAL

Model	RX 100
Voltage	6V
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	 20° ± 1.5° at 5,000 r/min Electrical
CDI: Pickup Coil Resistance (Colour) Source Coil Resistance (Colour)	 20 Ω ± 10% at 20°C (68°F) (W/R—B) 220 Ω ± 10% at 20°C (68°F) (B/R—B)
Ignition Coil: Minimum Spark Gap Primary Winding Resistance Secondary Winding Resistance	External Sealed type 13 kV or more at 500 r/min 12 kV or more at 8,000 r/min 6 — 7 mm 1.6 Ω ± 10% at 20°C (68°F) 6.6k Ω ± 20% at 20°C (68°F)
Charging System/Type	Flywheel magneto



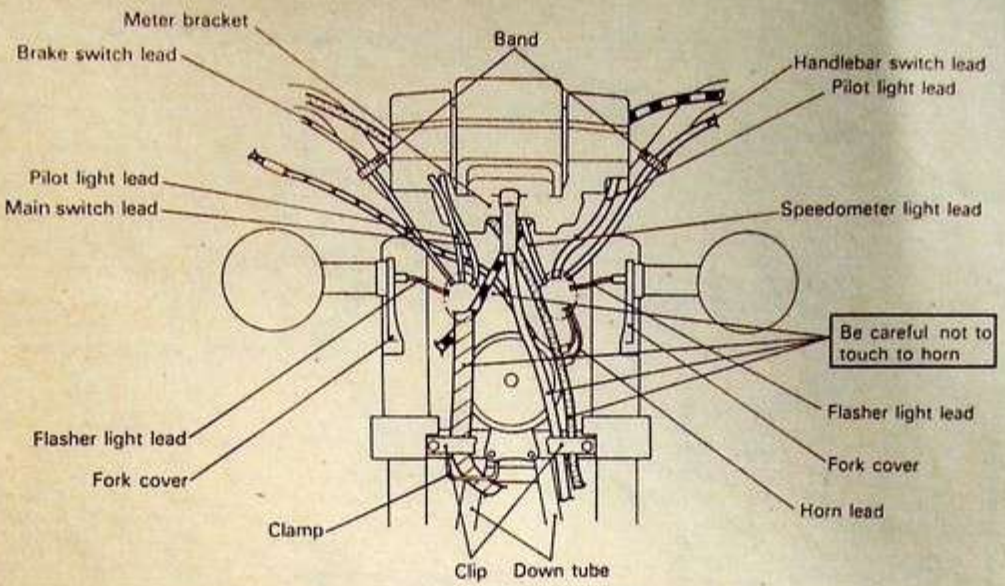
SPECIFICATIONS

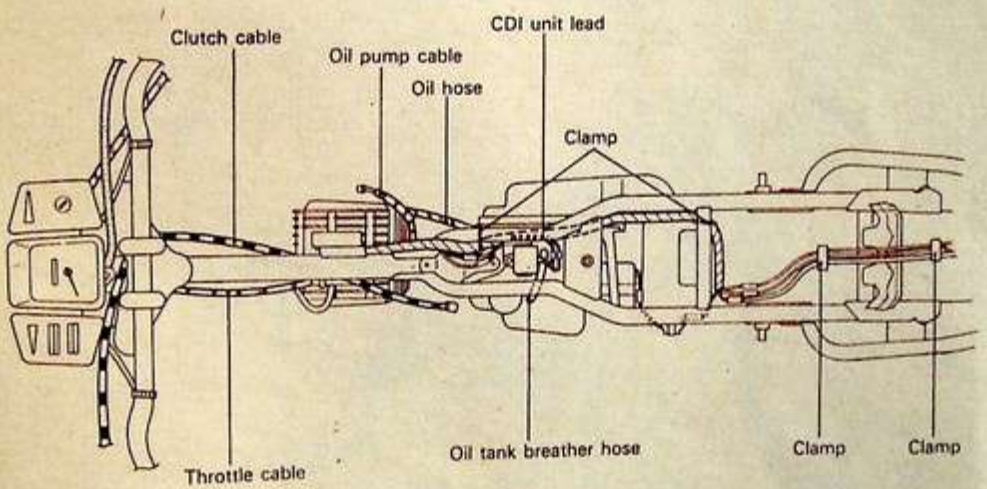
Model	RX 100
F.W. Magneto:	
Charging Current-Day	0.7A or more at 2,500 r/min 3.0A or less at 8,000 r/min
-Night	0.4A or more at 2,500 r/min 3.0A or less at 8,000 r/min
Charging Coil Resistance (Colour)	0.4Ω ± 10% at 20°C (68°F) (W—B)
Lighting Voltage	6.0V or more at 2,500 r/min 8.0V or less at 8,000 r/min
Lighting Coil Resistance (Colour)	0.3Ω ± 10% at 20°C (68°F) (Y/R—B)

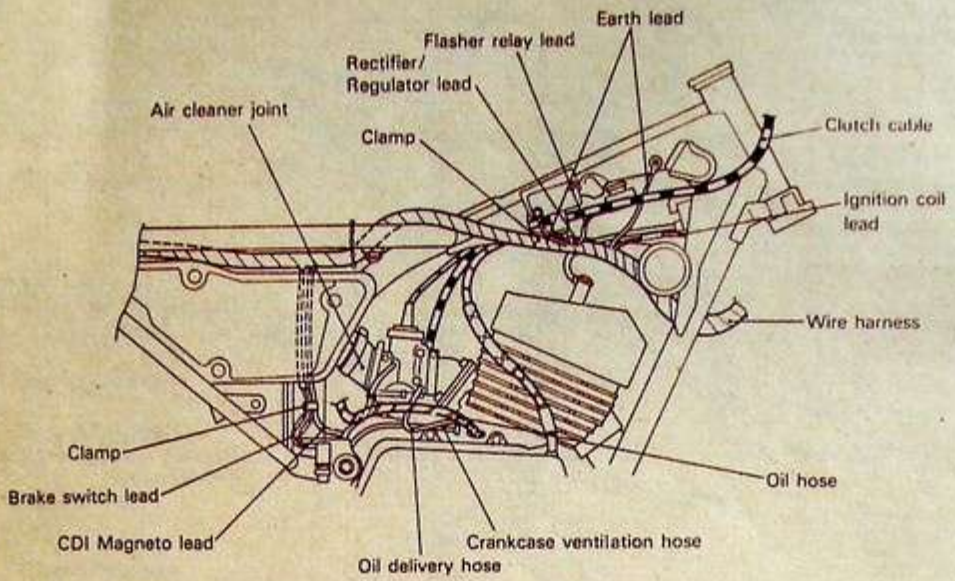


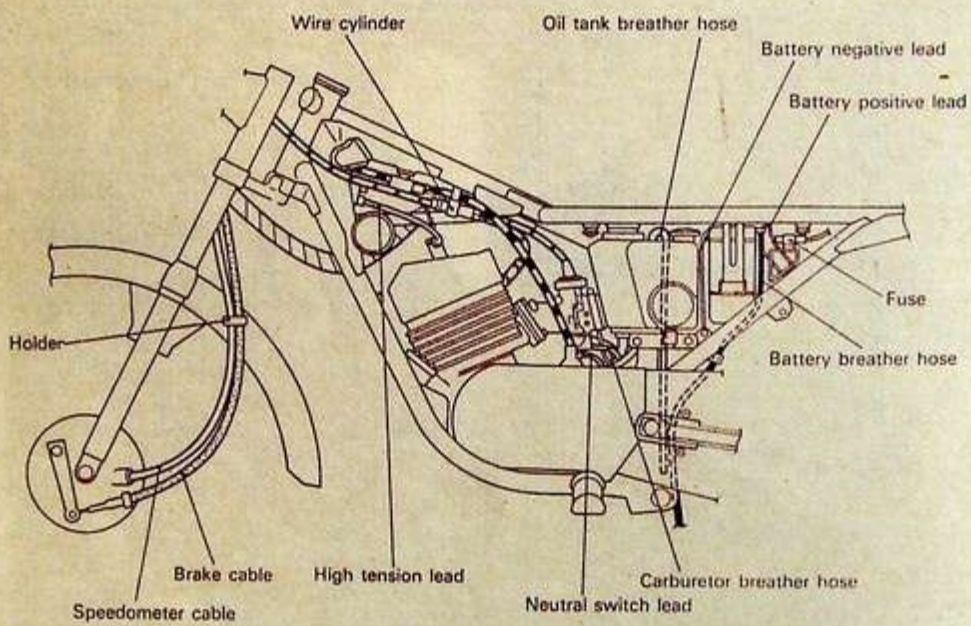
SPECIFICATIONS

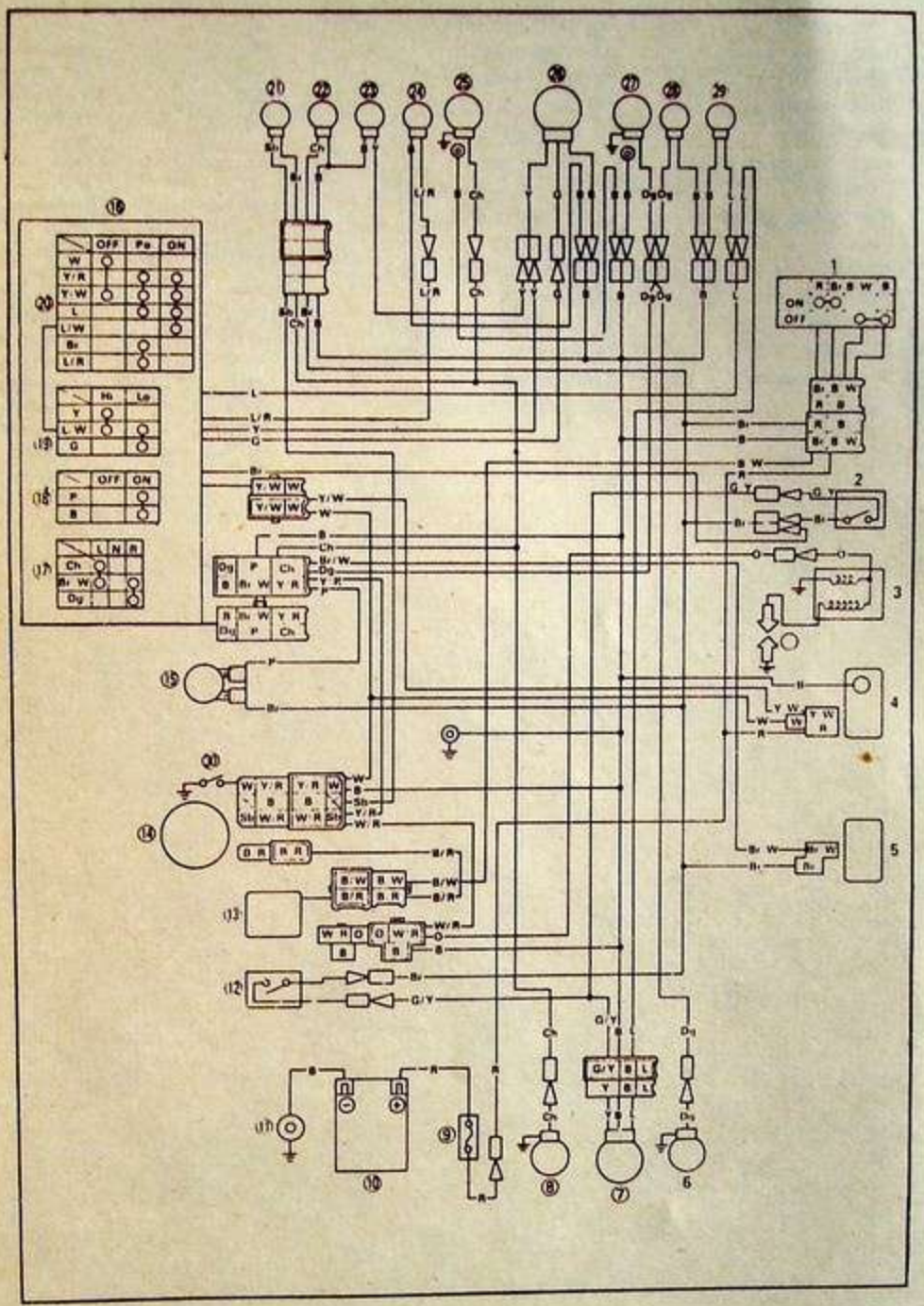
Model		RX 100
Rectifier/Regulator		
No Load Regulator Voltage	(Charging)	7.5 — 8.0V
	(Lighting)	Less than 8.8V
Capacity	(Charging)	4.0A
	(Lighting)	8.0A
Battery:		
Capacity		6V 4AH
Specific Gravity		1.240/20°C.
Horn:		
Type/Quantity		Plain type × 1
Maximum Amperage		3.0A
Flasher Relay:		
Type		Condenser type
Flasher Frequency		60 — 120 cycle/min
Wattage		10W × 2 + 3W
Circuit Breaker:		
Type		Fuse
Amperage for Individual Circuit/Quantity		
Main		10A × 1
Spare		10A × 1


Meter bracket
Brake switch lead
Band
Handlebar switch lead
Pilot light lead
Pilot light lead
Main switch lead
Speedometer light lead
Be careful not to touch to horn
Flasher light lead
Flasher light lead
Fork cover
Fork cover
Horn lead
Clamp
Clip
Down tube


Clutch cable
CDI unit lead
Oil pump cable
Oil hose
Clamp
Throttle cable
Oil tank breather hose
Clamp
Clamp


Earth lead
Flasher relay lead
Rectifier/
Regulator lead
Air cleaner joint
Clamp
Clutch cable
Ignition coil
lead
Wire harness
Clamp
Brake switch lead
CDI Magneto lead
Oil delivery hose
Crankcase ventilation hose
Oil hose


Wire cylinder
Oil tank breather hose
Battery negative lead
Battery positive lead
Fuse
Holder
Battery breather hose
Brake cable
Speedometer cable
High tension lead
Neutral switch lead
Carburetor breather hose



WIRING DIAGRAM

(1) Main switch
(2) Front brake switch
(3) Ignition coil
(4) Rectifier/Regulator
(5) Flasher relay
(6) Rear flasher light (right)
(7) Tail light
(8) Rear flasher light (Left)
(9) Fuse
(10) Battery
(11) Body earth
(12) Rear Brake switch
(13) CDI unit
(14) Flywheel magneto
(15) Horn
(16) Handlebar swith
(17) Flasher switch
(18) Horn switch
(19) Dimmer switch
(20) Light switch
(21) Neutral light
(22) Flasher indicator (left)
(23) High beam indicator
(24) Park light
(25) Front flasher light (left)
(26) Headlight
(27) Front flasher light (right)
(28) Flasher indicator (right)
(29) Meter light
(30) Neutral light switch

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

ENGINE TROUBLESHOOTING

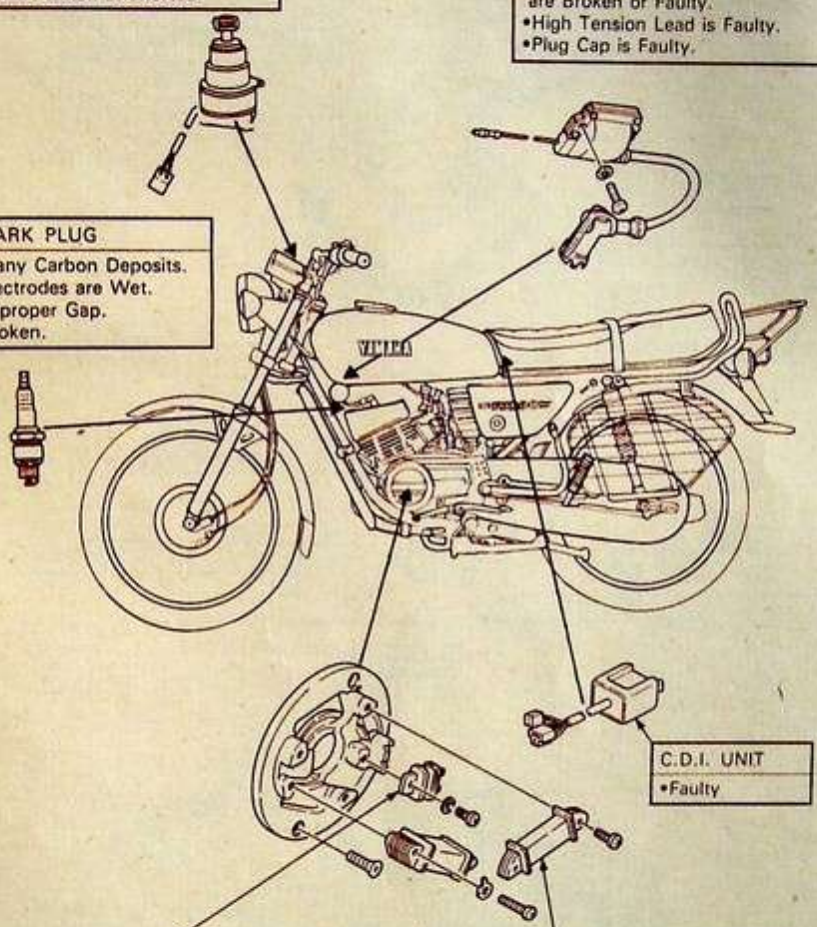
1. ELECTRICAL SYSTEM

•CHECK ALL WIRES CONNECTIONS.

MAIN SWITCH
•Main Switch is Shorted

IGNITION COIL
•Primary or Secondary Windings are Broken or Faulty.
•High Tension Lead is Faulty.
•Plug Cap is Faulty.

SPARK PLUG
•Many Carbon Deposits.
•Electrodes are Wet.
•Improper Gap.
•Broken.

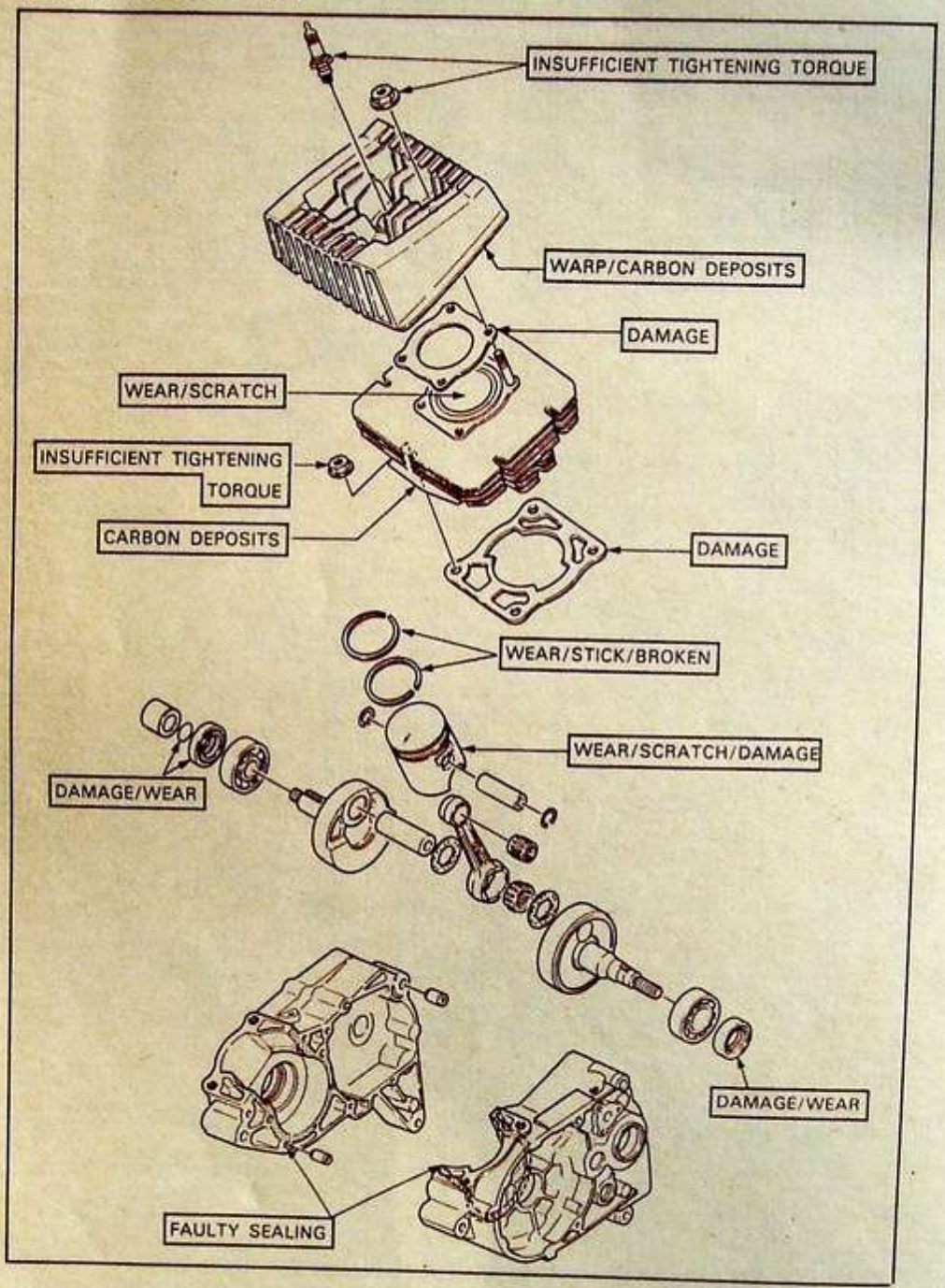


C.D.I. UNIT
•Faulty

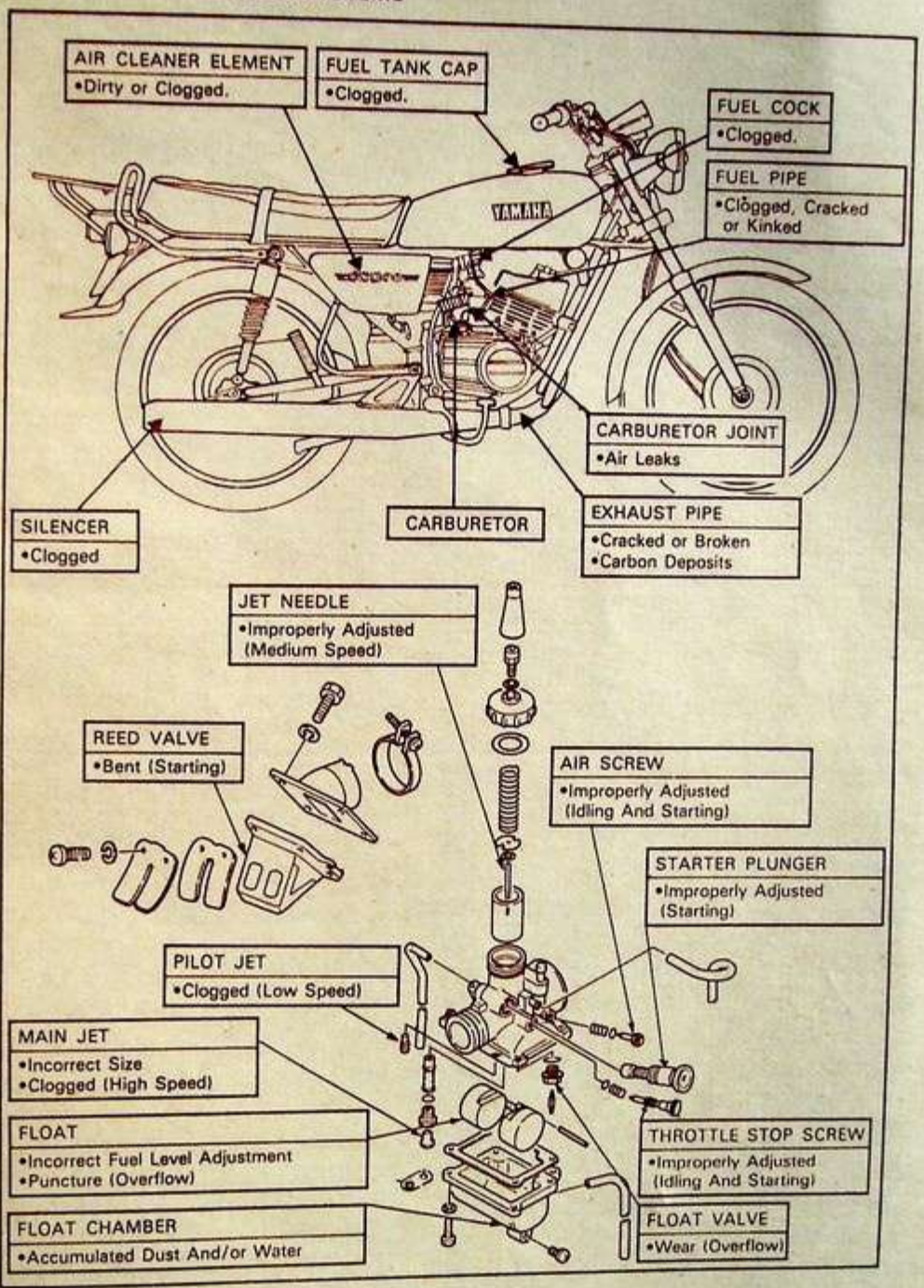
PICKUP COIL
•Windings are broken.

SOURCE COIL
•Windings are Broken.

2. COMPRESSION SYSTEM



3. INTAKE AND EXHAUST SYSTEMS



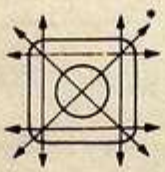
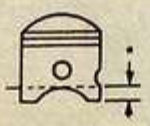
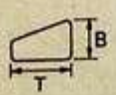
SPECIFICATIONS

Model	RX 100
Transmission:	
Primary Reduction System	Helical gear
Primary Reduction Ratio	74/19 (3.895)
Secondary Reduction System	Chain Drive
Secondary Reduction Ratio	39/15 (2.600)
Transmission Type	Constant mesh, 4-speed
Operation	Left foot operation
Gear Ratio	
1st	35/11 (3.182)
2nd	30/15 (2.000)
3rd	26/19 (1.368)
4th	23/23 (1.000)
Chassis:	
Frame Type	Double cradle
Caster Angle	27.5°
Trail	90 mm
Tyre	
Type	With tube
Size (F)	2.50-18-4PR
Size (R)	2.75-18-6PR
Tyre Pressure (Cold tyre):	
Singer rider (Front)	1.5 kg/cm² (22 psi)
(Rear)	2.0 kg/cm² (28 psi)
Double Rider (Front)	1.5 kg/cm² (22 psi)
(Rear)	2.3 kg/cm² (32 psi)
Maximum Load *	*162 kg Max Load is the total weight of cargo, rider, passenger, and accessories
Brake:	
Front Brake Type	Drum brake (130 ϕ)
Operation	Right hand operation
Rear Brake Type	Drum brake (130 ϕ)
Operation	Right foot operation
Suspension:	
Front Suspension	Telescopic fork (Japanese Kayaba)
Rear Suspension	Swing arm (Adjustable 5 Positions)
Shock Absorber:	
Front shock Absorber	Coil spring, Oil damper
Rear Shock Absorber	Coil spring, Oil damper
Wheel Travel:	
Front Wheel Travel	110 mm
Rear Wheel Travel	75 mm
Electrical:	
Ignition System	C.D.I. Magneto
Generator System	Flywheel magneto
Battery Capacity	6V 4AH

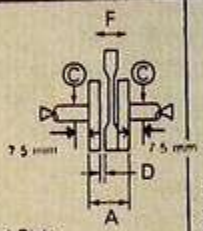
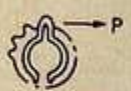
SPECIFICATIONS

Model	RX 100
Headlight Type:	Semi-sealed beam
Bulb Wattage/Quantity: Headlight Tail/Brake light Flasher light Park light	 6V, 25W/25W×1 6V, 5/18 W×1 6V, 10W×4 6V, 3W×1
Indicator Light Wattage/Quantity: "NEUTRAL" "HIGH BEAM" "TURN" Meter light	 6V, 3W×1 6V, 3W×1 6V, 3W×2 6V, 3W×1

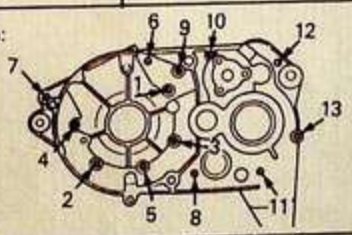
B. MAINTENANCE SPECIFICATIONS ENGINE

Model	RX 100
Cylinder Head: Warp Limit 	<0.03 mm * Lines indicate straightedge measurement
Cylinder: Bore Size Taper Limit Out of Round Limit	50.0 +0.03 mm <0.05 mm <0.01 mm
Piston: Piston Size Measuring Point*  Piston Clearance Oversize 1st 2nd 3rd 4th Piston Pin Offset	50.0-0.03 mm 10 mm 0.030 — 0.038 mm 50.25 mm 50.50 mm 50.75 mm 51.00 mm 0 mm (0 in)
Piston Ring: Sectional Sketch  Top Ring 2nd Ring	 Keystone B = 1.2 mm T = 2.0 mm Keystone B = 1.2 mm T = 2.0 mm

SPECIFICATIONS

Model		RX 100
End Gap (Installed)	Top Ring	0.15 – 0.35 mm
	2nd Ring	0.15 – 035 mm
Side Clearance (Installed)	Top Ring	0.03 – 0.05 mm
	2nd Ring	0.03 – 0.05 mm
Crankshaft		
Crank Width "A"		55.9 +0.05 mm
Run Out Limit "C"		<0.03 mm
Connecting Rod Big End Side Clearance "D"		0.2 — 0.7 mm
Small End Free Play Limit "F"		<2.0 mm
Clutch		
Friction Plate Thickness/Quantity		3.0 mm × 5
Wear Limit		<2.7 mm
Clutch Plate Thickness/Quantity		1.2 mm × 4
Warp Limit		<0.05 mm
Clutch Spring Free Length/Quantity		34.5 mm × 4
Clutch Spring Minimum Length		<33.0 mm
Clutch Release Method		Inner push, Screw push
Push Rod Bending Limit		<0.15 mm
Transmission:		
Main Axle Deflection Limit (Runout)		0.1 mm
Drive Axle Deflection Limit (Runout)		0.1 mm
Shifter:		
Shifting Type		Guide bar
Guide Bar Bending Limit		<0.05 mm
Kick Starter Type:		Kick and mesh type
Kick Clip Friction Force <Min. – Max.>		P = 1.0 kg <0.8 — 1.2 kg
Air Filter Oil Grade (Oilded Filter):		SAE 30

SPECIFICATIONS

Carburettor:	
Type/Manufacturer/Quantity	VM20/MIKUNI/1
1.K. Mark	1L100
Main Jet (M.J.)	# 115
Air Jet (A.J.)	Ø 1.0
Jet Needle-clip Position (J.N.)	4M2-3
Needle Jet (N.J.)	N-8
Cutaway (C.A.)	2.0
Pilot Jet (P.J.)	# 20
Pilot Air Screw (P.A.S.)	1-1/4 ± 1/2
Starter Jet (G.S.)	# 30
Float Height (F.H.)	21.0 ± 1.0 mm
Engine Idling Speed	1200 ± 50 r/min
Reed Valve: 	
Valve Stopper Height	9 mm
Reed Bending Limit	0.3 mm
Lubrication System:	Separate lubrication (Yamaha autolube pump)
Autolube Pump-Color Code	Orange
Minimum Stroke	0.20 — 0.25 mm
Maximum stroke	1.85 — 2.05 mm
Pully Adjusting Mark At idle	
Crankcase Tightening Sequence: 0.7 m.kg, (5.1 ft. lb)	

SPECIFICATIONS

Tightening Torque	Thread Size	Q'ty	M.kg	ft.lb
Cylinder head	M 8×1.25	4	2.5	18
Cylinder	M10×1.25	4	3.5	25
Spark plug	M14×1.25	1	2.0	14
Oil pump	M 5×0.8	2	0.5	3.6
Intake manifold	M 6×1.0	4	0.8	5.7
Crankcase	M 6×1.0	13	0.7	5.1
Crankcase cover	M 6×1.0	11	0.9	6.5
Flywheel cover	M 6×1.0	4	0.8	5.8
Oil pump cover	M 6×1.0	3	0.8	5.8
Drain plug	M12×1.5	1	2.0	14
Kick crank	M 8×1.25	1	2.5	18
Primary drive gear	M12×1.0	1	5.5	40
Clutch boss	M12×1.0	1	4.3	31
Clutch spring	M 5×0.8	4	0.6	4.3
Drive sprocket	M16×1.0	1	5.5	40
Neutral point	M14×1.5	1	2.0	14
Neutral switch	M12×1.5	1	0.4	2.9
Cam stopper	M14×1.5	1	2.0	14
Shift cam stopper lever Use LOCTITE or equivalent	M 6×1.0	1	1.4	10
Change pedal	M 6×1.0	1	1.0	7.0
Change shaft adjuster Use LOCTITE or Equivalent	M 8×1.25	1	3.0	22
Oil seal retainer	M 8×1.25	1	1.6	11
Flywheel magneto	M12×1.25	1	7.0	50
Stator	M 6×1.0	2	0.7	5.1

SPECIFICATIONS

Model	RX 100
Steering System:	
Steering Bearing Type	Ball Bearing
No./Size of Steel Balls	
Upper	22 pcs (3/16 in)
Lower	19 pcs (1/4 in)
Front Suspension:	
Front Fork Travel	110 mm
Fork Spring Free Length	296.5 mm
Limit	291.5 mm
Oil Capacity	175 ± 3CC
Oil Grade	Servo teleshocab oil
Rear Suspension:	
Shock Absorber Travel	70 mm
Rear Arm:	
Swing Arm Free Play Limit	
End (Skew)	<2 mm
Side	<2 mm
Wheel:	
Front Wheel Type	Spoke Wheel
Rear Wheel Type	Spoke Wheel
Front Rim Size/Material	1.50 × 18/Steel
Rear Rim Size/Material	1.50 × 18/Steel
Rim Runout Limit	
Vertical	<2 mm
Lateral	<2 mm

SPECIFICATIONS

Model	RX 100
Drive Chain Number of Links Chain slack	 110 links 20 — 30 mm
Drum Brake Type Drum Inside Dia. <Limit> Lining Thickness <Limit>	 Leading and trailing 130 mm < 131 mm 5.0 mm < 2.0 mm
Brake Lever & Brake Pedal: Brake Lever Free Play/position Brake Pedal Free Play/position	 5 — 8 mm/at lever pivot, 20 — 30 mm/15 mm (Vertical height below footrest top.)
Clutch Lever Free Play/position	2 — 3 mm/At lever pivot

SPECIFICATIONS

Tightening Torque	Thread Size	Q'ty	m.kg	ft.lb)
Front axle shaft	M10×1.25	1	4.3	31
Crown handle-Inner tube	M 8×1.25	2	1.5	11
Crown handle-Steering shaft	M10×1.25	1	4.0	29
Handle crown-Handle holder	M 8×1.25	4	1.9	13
Under bracket-Inner tube	M10×1.25	2	3.0	22
Pivot shaft	M12×1.25	1	6.0	43
Tension bar	M 8×1.25	2	1.9	13
Sprocket (Rear)	M 8×1.25	4	2.6	18
Camshaft lever	M 6×1.0	2	0.9	6.5
Rear axle shaft	M14×1.5	1	9.2	66
Sprocket shaft nut	M20×1.0	1	9.2	66
Shock absorber	M10×1.25	2	4.0	29
Front engine mounting bolt	M 8×1.25	1	3.0	22
Rear upper engine mounting bolt	M10×1.25	1	6.0	43
Rear lower engine mounting bolt	M10×1.25	1	6.0	43
Footrest-Frame	M 8×1.25	4	2.3	17
Cap Bolt-Front fork	M25×1.0	2	2.3	17