



YAMAHA



RX100



WORKSHOP MANUAL

YAMAHA RX100

YAMAHA

RX-100 MOTORCYCLE

WORKSHOP MANUAL

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FOREWORD

This manual is written by ESCORTS LTD. Faridabad primarily for use by COMPANY AUTHORISED DEALERSHIPS 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 these models may render them unfit to use and/or unsale.

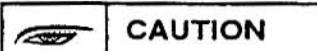
ESCORTS LTD. is continually striving to improve all models manufactured. Modifications and significant changes in specifications or procedures will be forwarded to all COMPANY AUTHORISED DEALERSHIPS and will where applicable, appear in future editions of this manual.

ESCORTS LTD.
SERVICE DEPARTMENT

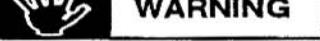
HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATIONS

LEGEND USED IN THE TEXT



It indicates special procedures that must be followed to avoid damage to the motorcycle.



IT INDICATES SPECIAL PROCEDURES THAT MUST BE FOLLOWED TO AVOID INJURY TO THE MOTORCYCLE RIDER OR PERSON INSPECTING OR REPAIRING THIS MOTORCYCLE.



It provides key information related with procedures and operations which must be clearly understood.

MANUAL FORMAT

All of the procedures in this manual are organised 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.

Illustrations in this workshop manual may not necessary match with the physical appearance of the motorcycle.

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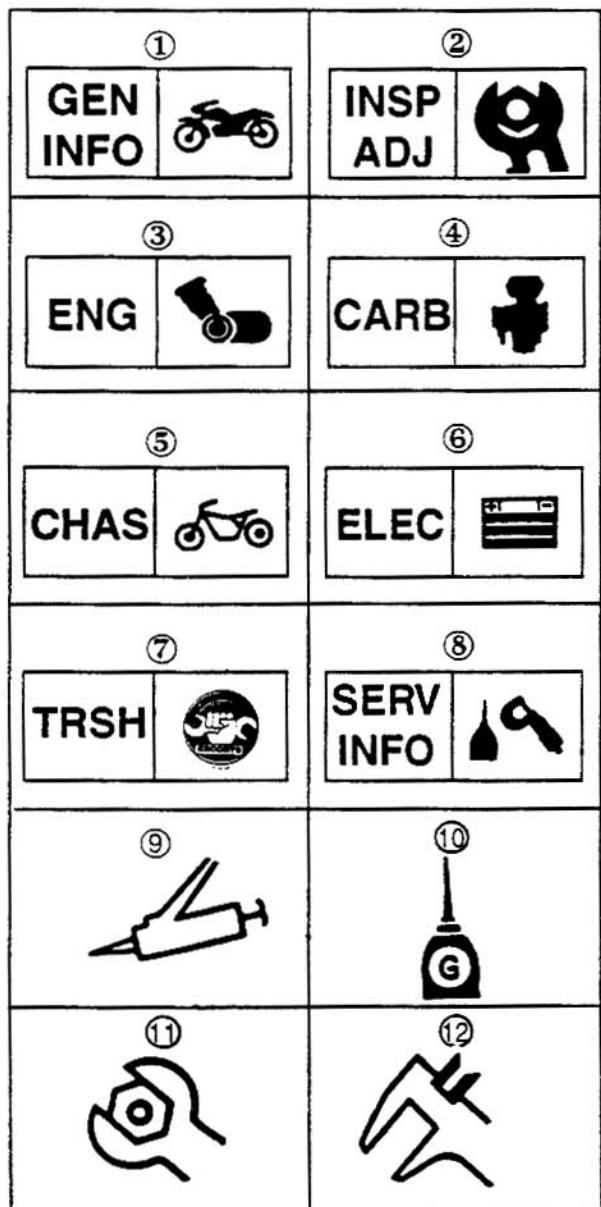
7

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ILLUSTRATED SYMBOLS
(Refer to the illustration)



Illustrated symbol 1 to 8 are designed as thumb tabs to indicate the chapter's number and content.

1. General Information
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CHAPTER 1

GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

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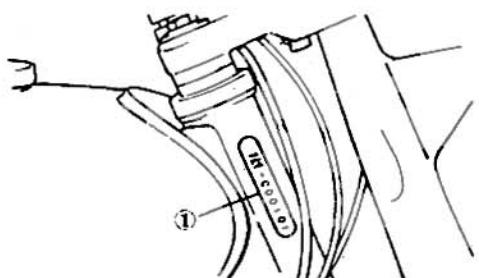
**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**



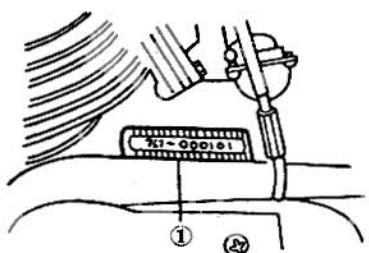
MOTORCYCLE IDENTIFICATION

GENERAL
INFORMATION

CHASSIS



ENGINE



MOTORCYCLE IDENTIFICATION

CHASSIS SERIAL NUMBER

The frame serial number① is stamped into the right side of the steering head pipe.

ENGINE SERIAL NUMBER

The engine serial number① is stamped into the left side of the engine.



WARNING

DO NOT TAMPER WITH ANY OF THESE NUMBERS. IT MAY LEAD TO LEGAL ACTIONS.

XX

Year of
Production

X

Month
Code

1L1

Model
Code

XXXXXX

Unit production
Number

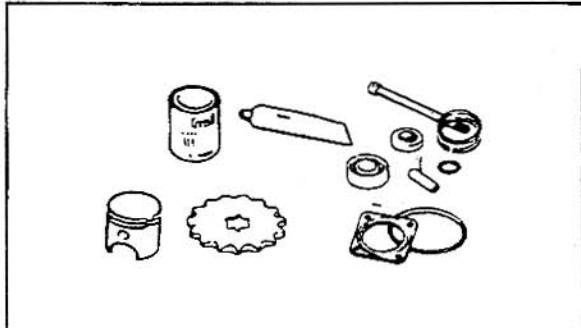
IMPORTANT

The first 2 digits denotes year of production code, next digit represents month code, followed by model code and the remaining 6 digits are the unit production number.



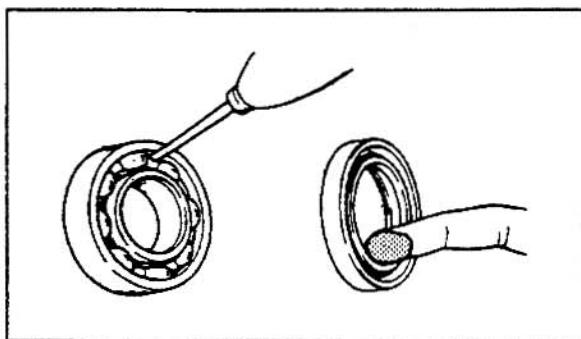
IMPORTANT INFORMATION

1



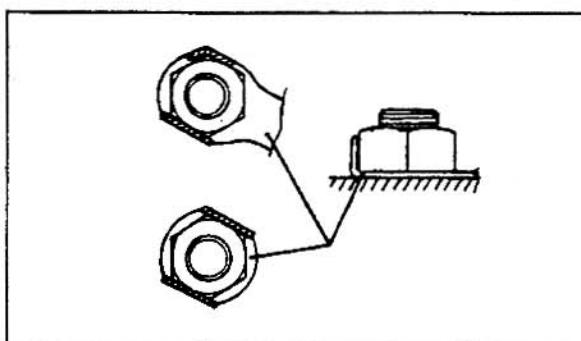
ALL REPLACEMENT PARTS

1. We recommend to use YAMAHA genuine parts for all replacements. to ensure safe long and trouble free performance of motorcycle. Use oil or grease recommended by Escorts for assembly and adjustment.



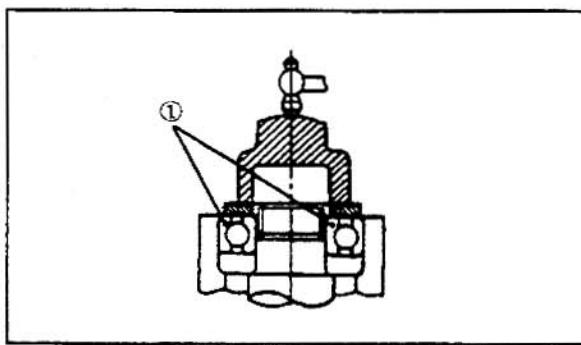
GASKETS, OIL SEALS & O-RINGS

1. All gaskets and oil seals should be replaced when an engine is overhauled. All gasket surfaces, oil seals lip 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

1. All lock washers 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.



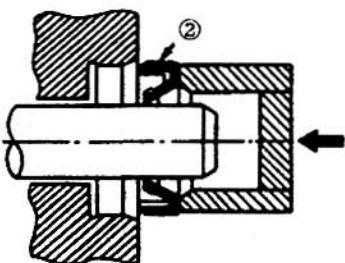
BEARINGS AND OIL SEALS

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



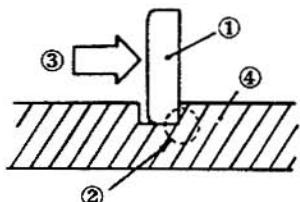
IMPORTANT INFORMATION

1



CAUTION

Do not use compressed air to spin the bearings dry. This causes damage to the bearing surface.



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 of the thrust (3) it receives. See the sectional view shaft (4).

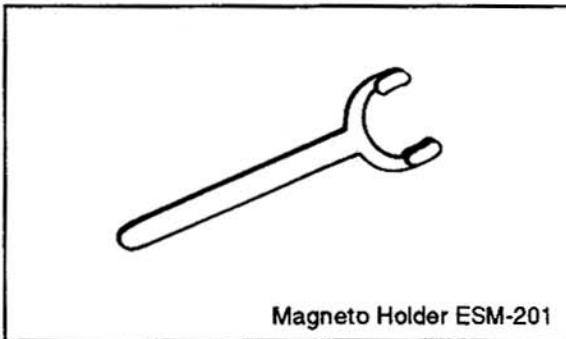


IMPORTANT

**FITMENT IF DONE OTHERWISE
WOULD CAUSE CIRCLIP TO JUMP
OF GROOVE AND DAMAGE
RELATED COMPONENTS**



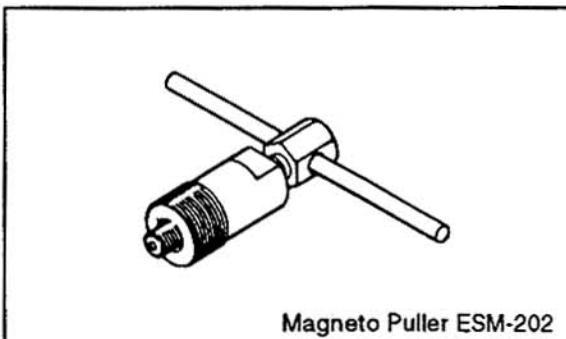
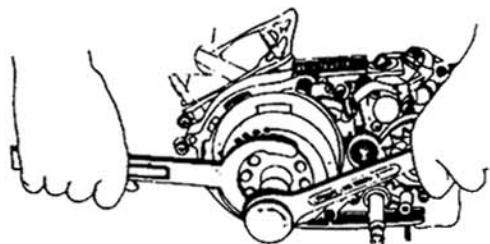
The Special Service Tools are necessary for complete and accurate tune-up and assembly. Using the correct special service tool will help prevent damage caused by the use of improper tools or improvised techniques.



Magneto Holder ESM-201

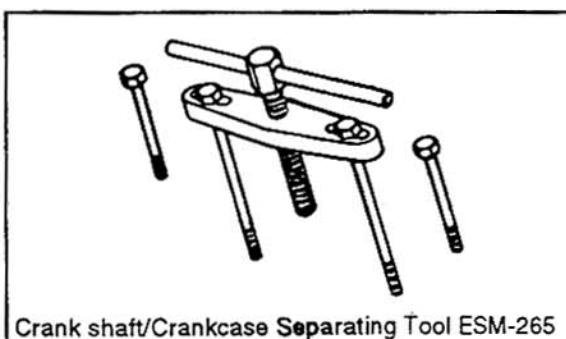
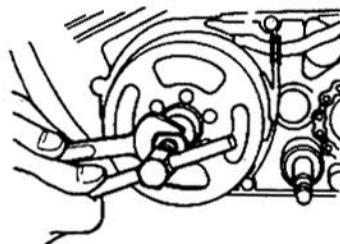
FOR ENGINE SERVICE

1. To Hold the Magneto Flywheel.



Magneto Puller ESM-202

2. To Remove the Magneto



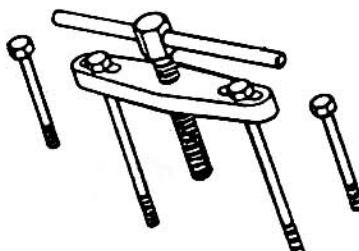
Crank shaft/Crankcase Separating Tool ESM-265

3. To Separate the Crankcase.



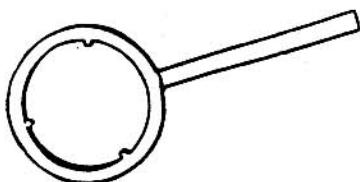
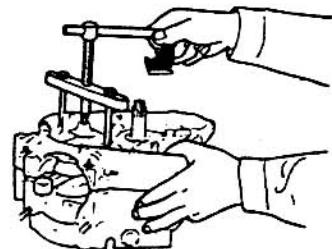


SPECIAL SERVICE TOOLS



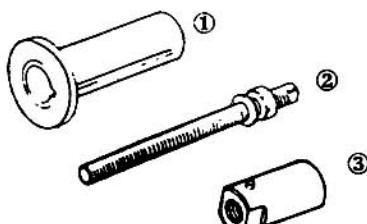
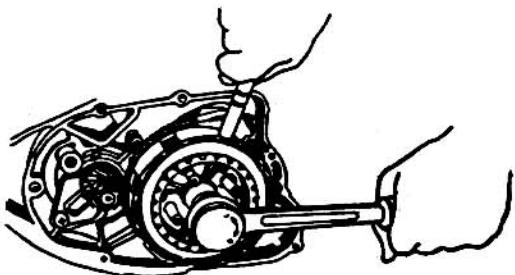
Crank Shaft/Crank Case Separating Tool - ESM 265

CONTD
To Remove Crank Shaft



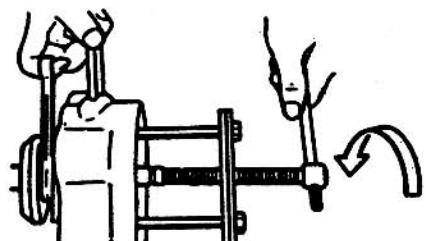
Clutch Hub Holder - ESM 233

4. To Hold the Clutch Hub.

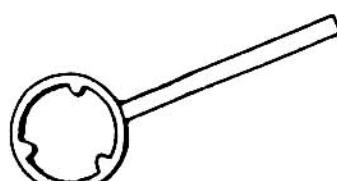


Crankshaft Installing Tool - ESM 266

5. To Install the Crankshaft.

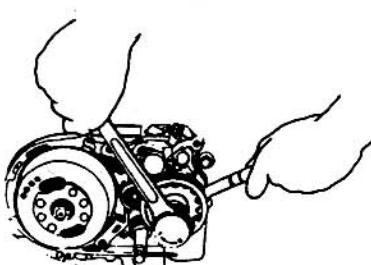


1 Pot
2 Bolt
3 Adapter



Driving Sprocket Holder - ESM 205

6. To Hold be Driving Sprocket.



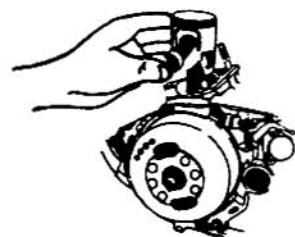


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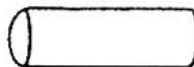
Piston Pin Replacer - ESM 207

7. To Remove the Piston Pin.



Piston Ring Compressor - ESM 210

8. To Compress Piston Rings for
Installing the Cylinder.



Punch - ESM 222

9. To Press Home Crankshaft Seal.

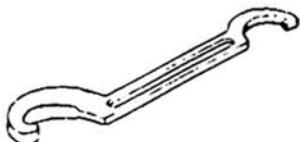


Punch - ESM 224

10. To Press Home Gearshaft Seal.



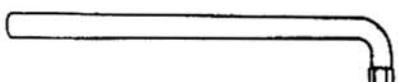
SPECIAL SERVICE TOOLS



Spanner Front Fork Stem - ESM 221

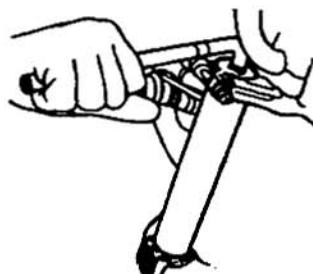
FOR CHASSIS SERVICE

1. To Loosen or Tighten Steering Nut or Silencer Nut.



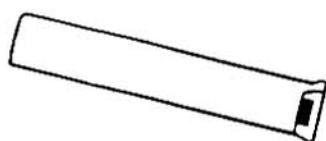
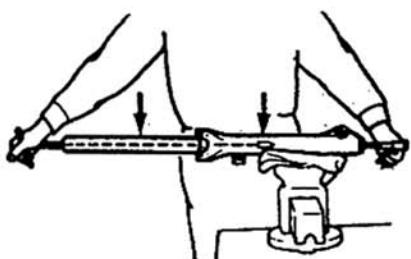
Front Fork Top Plug Spanner - ESM 214

2. To Loosen or Tighten Front Fork Top Plug.



Front Fork Inner Tube Nut Holder - ESM 213

3. To Hold the TFF Plunger.



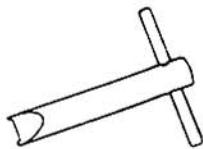
Front Fork Inner Tube Adjusting Gauge - ESM 264

4. For Adjusting Both Front fork Inner Tubes.



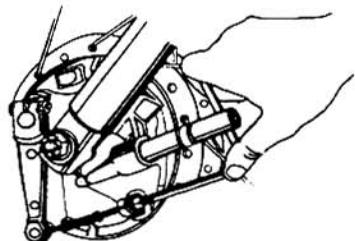


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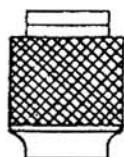
Spanner Speedometer Gear Nut - ESM 237

5. To Loosen or Tighten Speedometer Gear Nut.



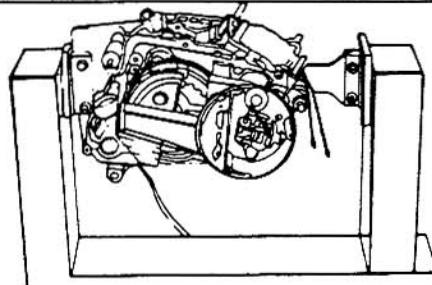
T.F.F. Oil Seal removal tool : ESM-270

6. To remove T.F.F. Oil Seal



T.F.F. Oil Seal Installing tool : ESM-275

7. To Install T.F.F. Oil Seal



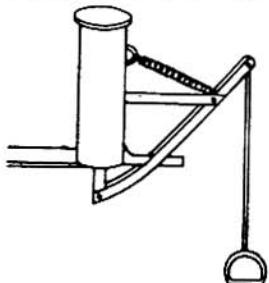
Engine Assembly Stand

8. For Assembly and Disassembly of the Engine.



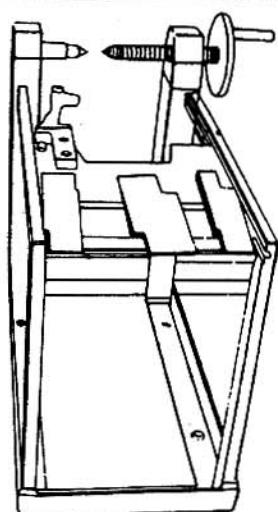
SPECIAL SERVICE TOOLS

1



Rear Shock Absorber Opening Fixture

9. For Opening Rear Shock Absorber.



Wheel Rim Truing Fixture

10. For Truing the Front/Rear Wheel.



SPECIAL NOTES

- Always use a new cotter pin on the axle nut.
- Always use standard recommended make and type of spark plug only.
- Turn each puller adjuster bolt exactly the same amount to maintain correct axle alignment.
- While refitting the chain lock, please ensure that its closed end should always be in the direction of chain rotation.
- Do not add any chemical additives. Gear Box Oil also lubricates the clutch, and additives could cause the clutch to slip.
- Dirty air filter element causes excessive fuel consumption and power loss. In case the air filter element is torn or cut from any place, the same should be replaced with a new one immediately. The Engine should never be run without a properly installed air filter element, as otherwise it may result in overheating and damage to the Engine.



CHAPTER 2 PERIODIC INSPECTIONS AND ADJUSTMENTS

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CARBURETTOR	2-11
CLUTCH	2-12
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INSP
ADJ.

2

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

NOTES ON MAINTENANCE



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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 silencer

2



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NOTES ON MAINTENANCE

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. Install the parts, after checking the smooth movement.
- d. Oil the contact surfaces of the moving parts .



8. Tightening torque.

Tighten the parts to specification by using the torque wrench.



IMPORTANT

Always keep Your environment clean

MAINTENANCE



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● PERIODIC MAINTENANCE SCHEDULE

ITEMS	REMARKS	INITIAL	THEREAFTER EVERY			
		Running in 1000 Km or 1 Month	1000Km or 1 Month	3000Kms or 3 Months	6000Kms or 6 Months	12000Kms or 12 Months
ENGINE						
Spark Plug*	Check, Clean or replace.	●			●	
Transmission	Replace (Warm Engine Before Draining).	●			●	
Carburettor*	Check/adjust idle speed, Starter lever (Choke) operation and clean.	●		●		
Autolube Pump*	Check-ensure bleeding to avoid air block	●			●	
Throttle cable*	Check operation	●			●	
Clutch *	Check operation	●			●	
Fuel Pipes	Check for any damage or crack. Replace, if necessary	●	●			
Fittings/Fasteners*	Check all Engine nuts and bolts for looseness.	●			●	
Decarbonising*	Remove carbon (Cyl./Cyl. head/ Piston Assy./Muffler etc.)				●	
ELECTRICAL						
Battery	*Check electrolyte level and add distilled water every 15 days.	●			●	
	*Check specific gravity (++) and breather pipe for proper routing.	●			●	
Brake light switch	Check and adjust.	●	●			
Bulbs and horn	Check operation, Replace, if necessary.	●	●			
Head light	Check/adjust beam.	●			●	

2

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MAINTENANCE

● PERIODIC MAINTENANCE SCHEDULE

ITEMS	REMARKS	INITIAL	THEREAFTER EVERY			
		Running in 1000 Km or 1 Month	1000Km or 1 Month	3000Kms or 3 Months	6000Kms or 6 Months	12000Kms or 12 Months
CHASSIS						
Brakes*	Check operation.	●	●			
Drive Chain*	Check and adjust tension/lubricate	●	●			
	Clean, Lubricate and align.			●		
Wheels*	Check for damage/Rim run out & Spokes looseness.	●		●		
Wheel Bearings*	Check for damage, wear, looseness/tightness. Replace if necessary.				●	
	Repack grease.					●
Tyres	Check for Wear.			●		
	Check for tyre pressure.	●	●			
Front Fork*	Check for operation and oil leakage.	●			●	
	Replace Oil (#)					●
Steering Bearing*	Check for looseness/tightness.	●		●		
	Repack grease.					●
Rear Shock Absorber*	Check for operation and oil Leakage			●		
All Nuts & Bolts	Check for looseness.	●		●		
Oil Tank	Check and top up Engine(2T) oil.	●	●			
Fuel filter*	Clean.			●		
Fuel Tank and Fuel Cock*	Clean.			●		
Rear Arm Pivot*	Check Rear Arm Assy. for looseness. (Replace silent block bushes after 24000 Kms or 24 months).	●				●
Centre Stand & Lever Pivots	Lubricate.	●	●			
Air filter	Clean, Replace if necessary.	●		●		

* It is recommended that these items be serviced by COMPANY AUTHORISED DEALERSHIPS ‡ Use 175±3ml. Servo teleschocab* oil or special Escorts oil or special Yamaha oil §§ battery specific gravity: 1.240 at 20°C



IMPORTANT

• All the above recommendations are only for general guidance.

• Actual period of service largely depends on the type of usage of motorcycle for which customer must contact COMPANY AUTHORISED DEALERSHIPS.

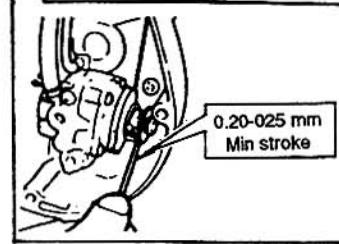
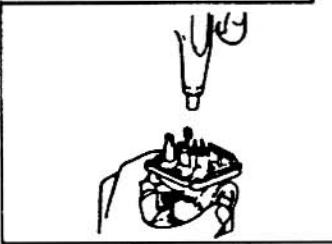
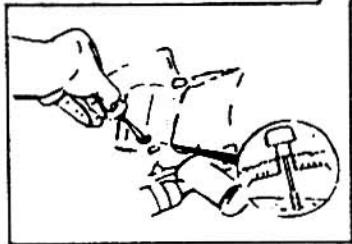
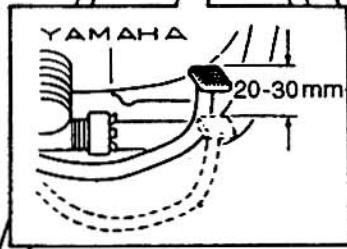
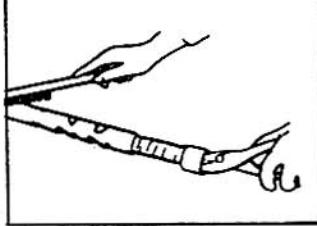
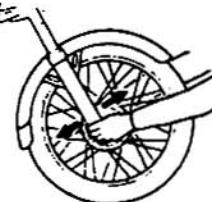
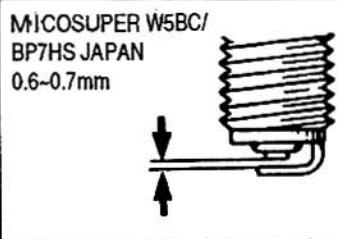
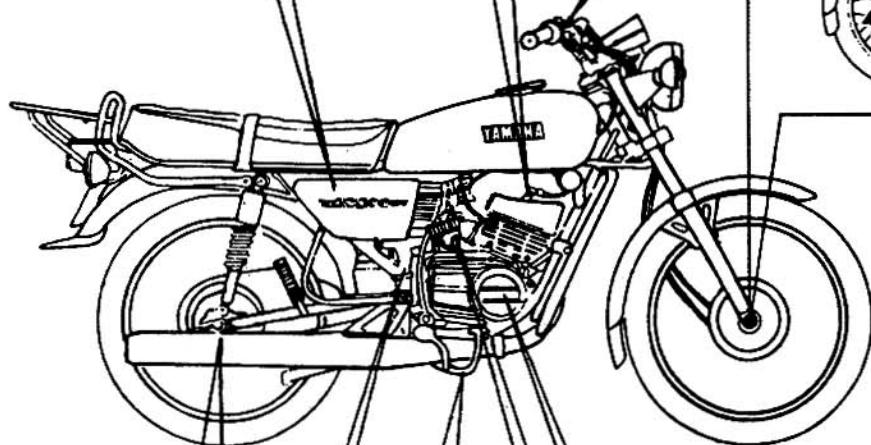


INSP
ADJ.

PREVENTIVE MAINTENANCE/ LUBRICATION

RH VIEW

2



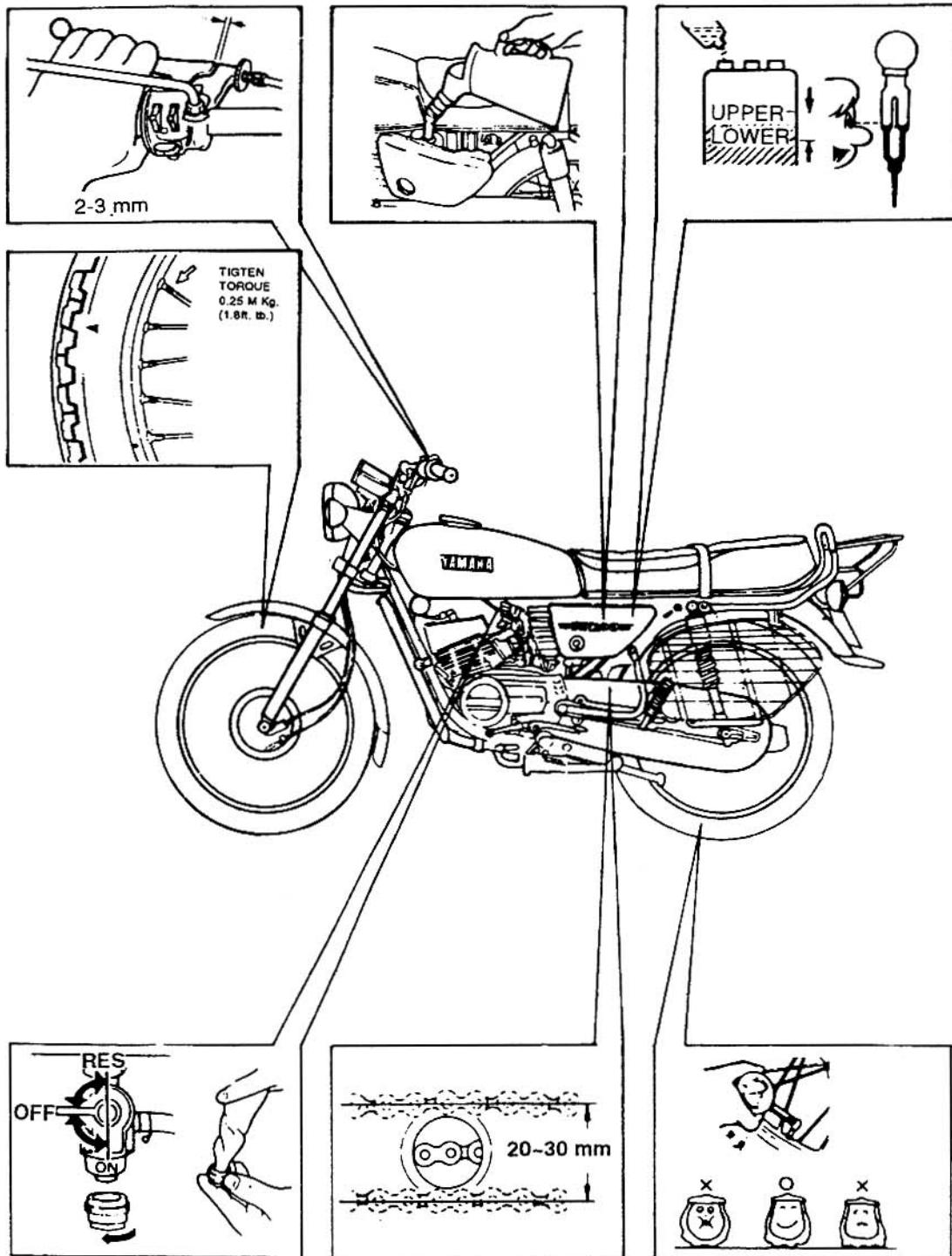


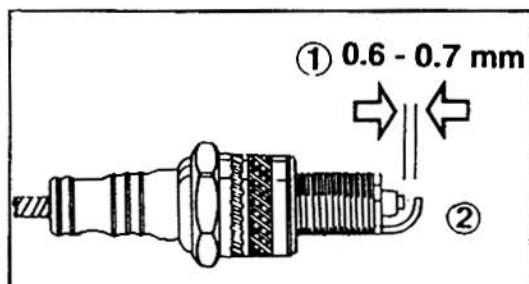
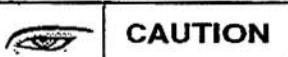
INSP
ADJ.

PREVENTIVE MAINTENANCE/ LUBRICATION

LH VIEW

2



**① Plug Gap ② Side electrode****CAUTION**

- Do not overtighten across thread the spark plug as the aluminium threads of cylinder head may be damaged.**
- Do not allow any foreign particles to enter the Engine through spark plug hole while the plug is removed. Please ensure that the hole is covered with a cloth.**

RECOMMENDED SPARK PLUG:

- MICO SUPER W5BC**
- BP7HS (NGK) - JAPAN**

Optimum performance of the spark plug depends upon the usage condition.

Condition of the spark plug indicates how the Engine has been operating. From the colour and appearance of the spark plug the Engine and the riding conditions of the motorcycle can be judged as ahead:

SL.NO.	CONDITION	COLOUR AND APPEARANCE	INDICATION
1.	Normal	Insulator tip greyish-yellow to light brown	<ul style="list-style-type: none"> Every Thing is in order
2.	Fouled by soot	Dull black velvety carbon deposits.	<ul style="list-style-type: none"> Clogged air filter. Fuel-air mixture rich. Electrode gap more. 'Cold' plug used. Insufficient H.T. Voltage. Prolonged Idling of Engine.
3.	Fouled by oil	Shining black 'wet' carbon deposits.	<ul style="list-style-type: none"> Oil-fuel mixture rich. Worn-out cylinder/pistonrings
4.	Overheated	Insulator burnt white with pearly deposits of eroded electrodes.	<ul style="list-style-type: none"> Fuel-air mixture lean. Improper Seating of plug. 'Hot' plug used.

Always use **ONLY** the standard recommended make and type of spark plug.

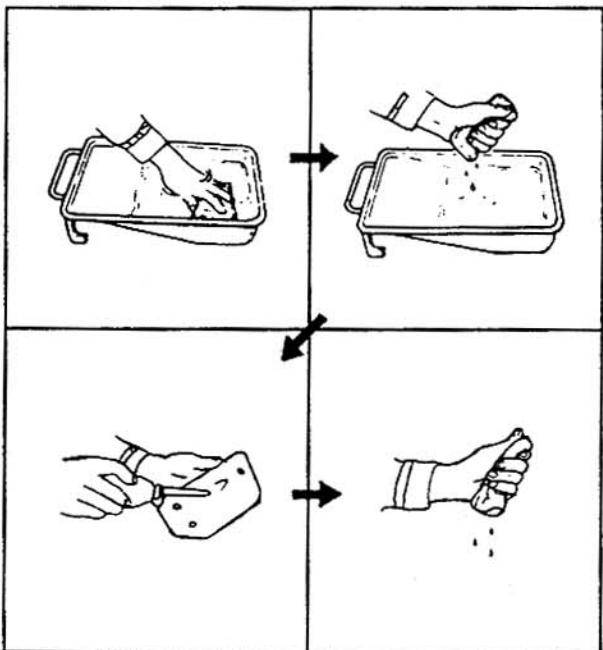
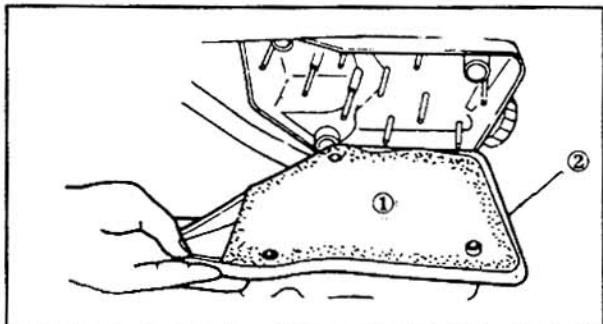


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ENGINE

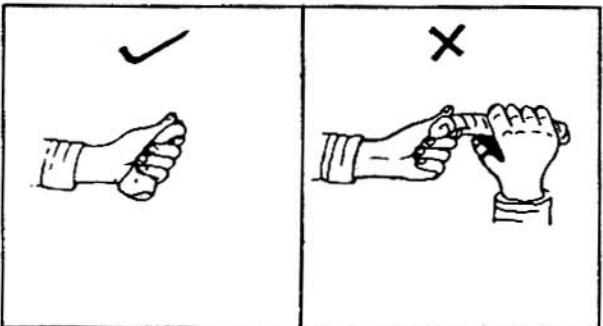
AIR CLEANER

2



AIR CLEANER ELEMENT

1. Remove RH side cover and unscrew cap case assy.
2. Gently pull out air filter element① from cap case assy.②
3. Clean air cleaner element in a clean solvent (Petrol/Kerosene), thoroughly, in a clean tray. Repeat till all the dust has been washed off.
4. Squeeze out excess solvent from the element and dry it by stirring in air.
5. Gently "Smear/Spray" 2-stroke engine oil into the entire outer foam surface of element ie, the outer side towards cap case assy.
6. Squeeze out excess 2-stroke engine oil.
7. Wipe out entire inner surface of air filter case assy.
8. Install air filter element in cap case assy. & screw it back in position.
9. Assemble back RH side cover.



CAUTION

Do not squeeze air filter element.

CAUTION

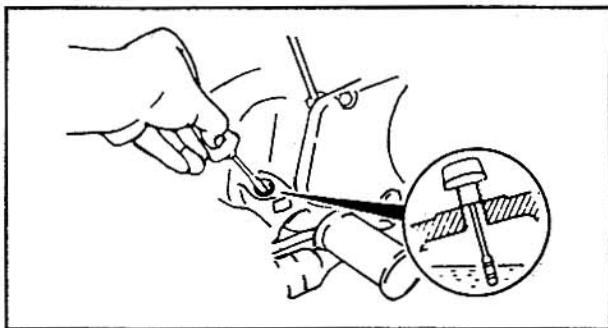
- Dirty air cleaner causes excessive fuel consumption and loss of power.
- Air filter should be cleaned and lubricated more frequently. If motorcycle is operated in dusty areas.



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TRANSMISSION OIL

2

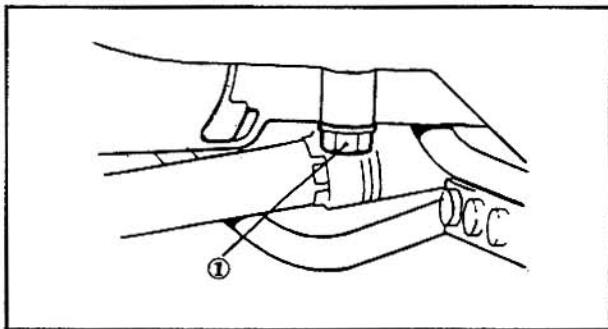


TRANSMISSION OIL

1. Check oil level with motorcycle rear wheel lifted off ground and front wheel touching ground and motorcycle on central stand.
2. Transmission oil level to always be between maximum & minimum levels on dipstick.
3. Top-up if required.



Recommended oil
Multigrade 20W/40 - M/s
Indian oil corp.
CRB 20W/40 - M/s Castrol

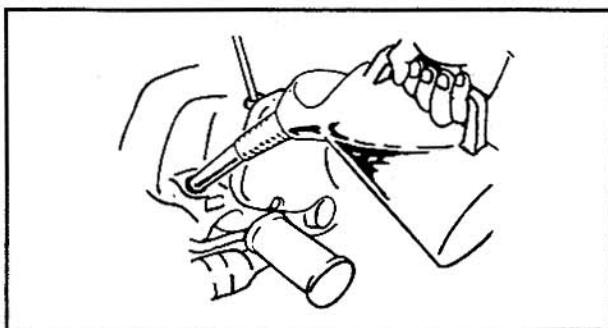


REPLACEMENT

1. Warm-up engine with motorcycle on central stand.
2. Keep oil pan below engine.
3. Remove drain bolt① and drain out oil completely.
4. Install drain bolt① with its gasket.



Drain bolt
2.0 Kg.m. (14ft. lb.)



5. Fill transmission oil
6. Check oil level



0.65 L



CAUTION

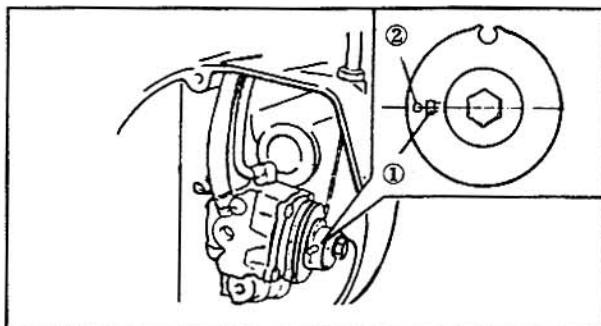
- Always use only recommended grade/quantity of transmission oil.
- Do not add any chemical additives into the gear box as gear box oil also lubricates the clutch, and additives could cause the clutch to slip.



INSP
ADJ.

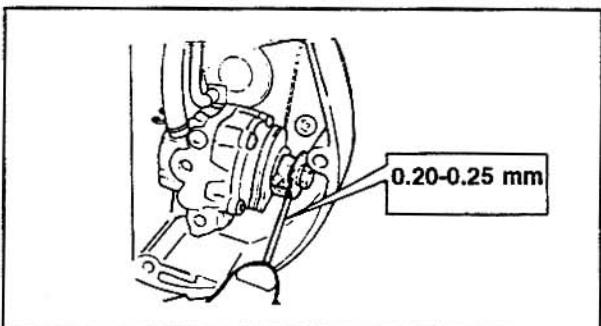
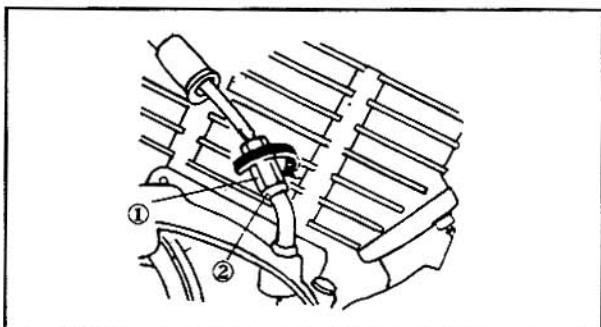
AUTOLUBE PUMP

2



AUTOLUBE PUMP Cable Adjustment

1. Check to see if pump guide pin① is aligned with mark on adjusting pulley②
2. If not aligned, align by turning adjuster① in or out by loosening locknut② and then re-tightening.

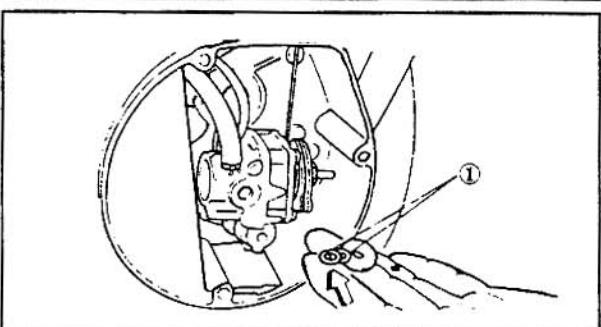


Minimum pump stroke adjustment

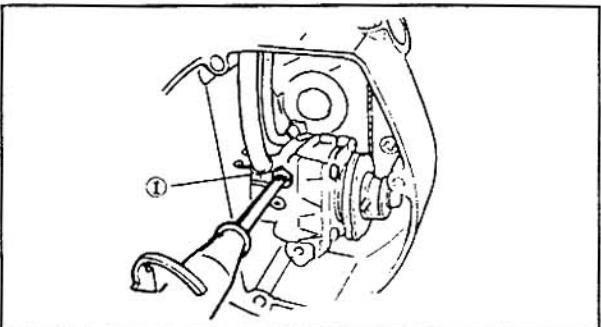
1. Rotate engine so that adjust plate moves out to limit.
2. Measure:
 - Minimum pump stroke with feeler gauge



Minimum Pump Stroke:
0.20~0.25mm

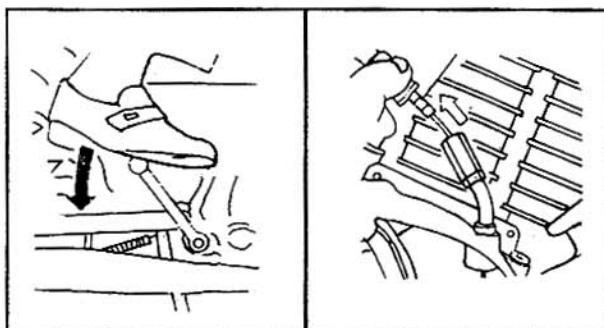


3. If clearance is not correct, adjust by the shim①
Adding of shim will increase the stroke and vice versa.

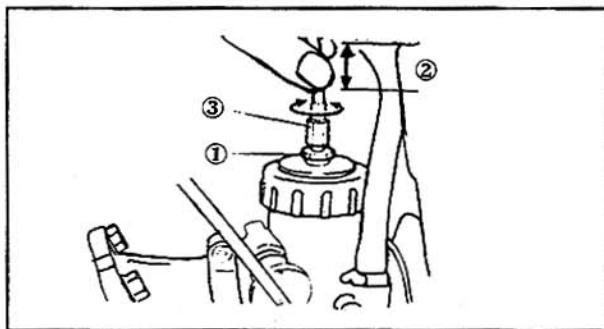


Air Bleeding

1. Remove:
 - Pump bleed screw① and keep oil running out until air bubbles disappear.
2. Install:
 - Bleed screw①

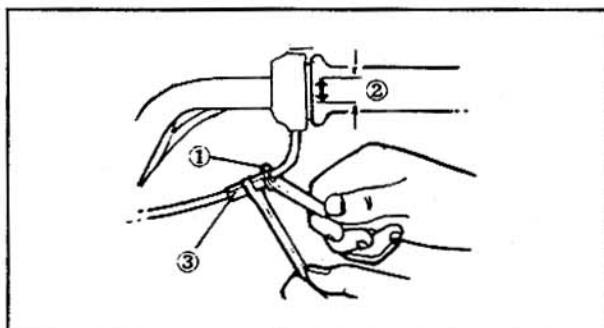


- Start the engine and with outlet pipe disconnected from carburetor, pull the pump wire① all the way for some minutes, to ensure that all air bubbles are removed and smooth oil flow is taking place.



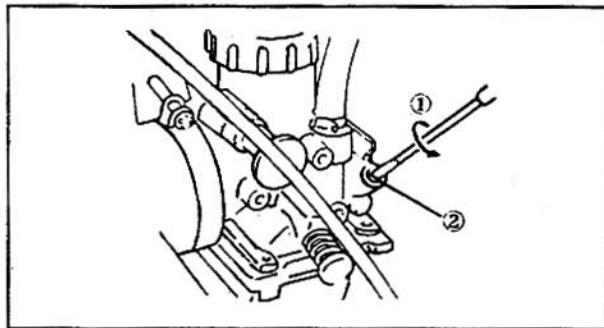
Throttle Grip Free play

- Loosen:
•Locknut①
- Adjust:
•Cable free play② 1~2 mm by turning cable adjuster③ in or out.
- Tighten:
•Locknut①



Throttle Cable Free Play

- Loosen:
•Loosen① locknut
- Adjust:
•Cable free play② 5~8mm. Turn cable adjuster③ in or out.
- Tighten:
•Locknut①

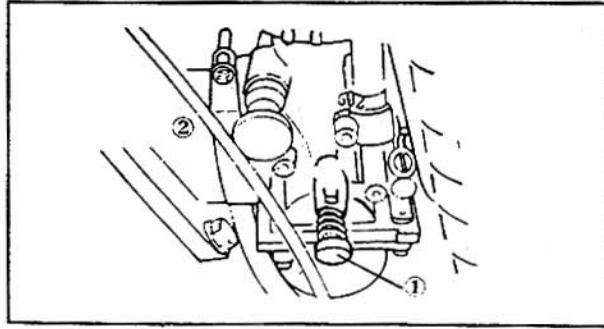


IDLE SPEED

- Start engine and warm for 2-3 minutes.
- Turn pilot air screw① in until lightly seated.
- Back out by specified number of turns with screw driver②



**Pilot Air Screw Turn Out:
¾ to 1½ Turns**



- Turn throttle stop screw③ out until specified idle speed is attained.



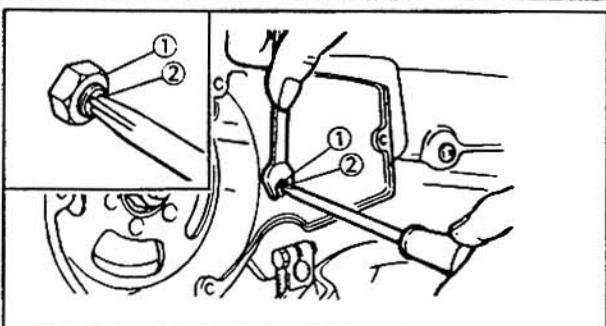
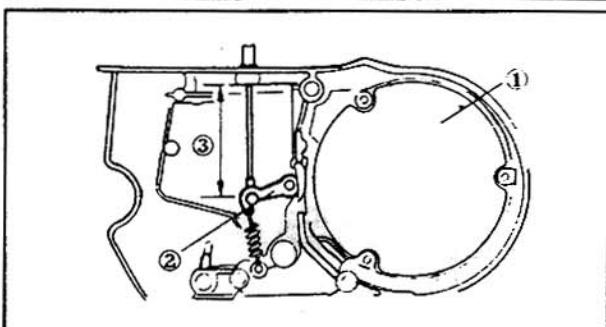
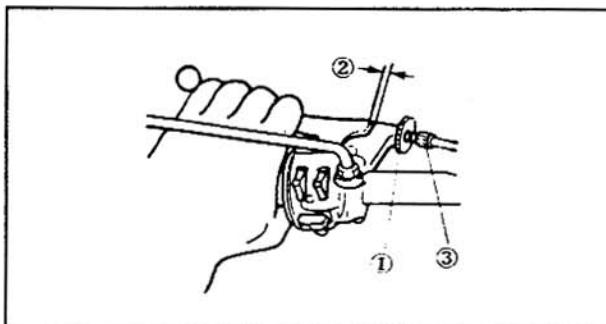
**Engine Idle Speed:
1,200 ± 50 rpm**



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CLUTCH

2



Cable Adjustment

1. Loosen:
•Locknut①
2. Adjust:
•Cable free play② 2–3 mm by turning cable adjuster③ in or out.
3. Tighten:
•Locknut①

Mechanism Adjustment

1. Remove:
•Left crankcase cover①
2. Position the push lever② by the cable adjuster and adjust lever height③ =75mm.
3. Install:
•Left crankcase cover①
4. Loosen:
•Locknut①
5. Screw in adjuster② until tight and back it out $\frac{1}{4}$ turn.
6. Tighten
•Locknut①

CAUTION

Do not increase engine RPM while de-clutching.

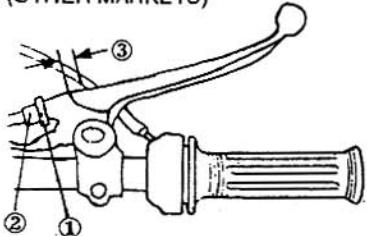
IMPORTANT

- Clutch free play plays an important role in performance.
- Difficulty posed in any adjustment should be done by COMPANY AUTHORISED DEALERSHIPS.
- The clutch lever should be pulled fast and released slowly for smooth operation of motorcycle.
- Throttle should not be opened when using starter lever (choke)
- Always ensure to bring the starter lever (choke) to original ("Off") position, after the engine has warmed-up.

CAUTION

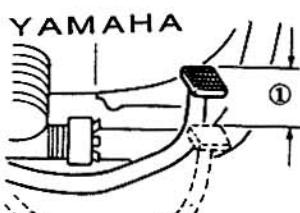
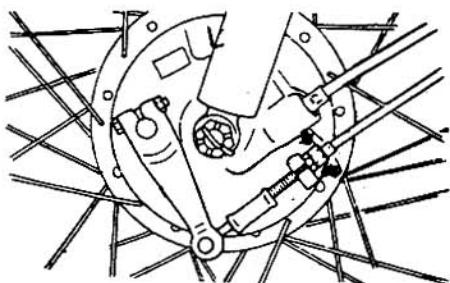
Never give excess throttle when running engine in neutral position. It can damage engine components.

5-8 mm (INDIAN MARKETS)
2.5-3.5 MM (OTHER MARKETS)



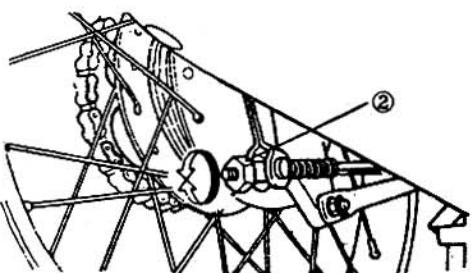
Brakes

1. Loosen:
 - Locknut ①
2. Adjust:
 - Free play by adjuster ②
3. Tighten:
 - Locknut ①
 - ③ 5-8 mm (Indian Markets)
2.5-3.5 mm (Other Markets)



Rear.

1. Adjust:
 - Free play ① to 20~30mm by turning the adjuster ② at rear of wheel in or out.



CAUTION

Do not rest your foot on rear brake foot pedal while driving.



IMPORTANT

- Brakes ensures personal safety and should always be maintained for proper adjustment.
- Always check brake light operation after front and rear brake adjustment is done.



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TYRE

TYRE

1. Inspect:
Tyre wear

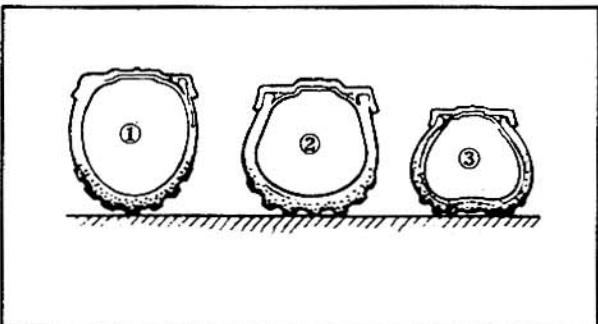
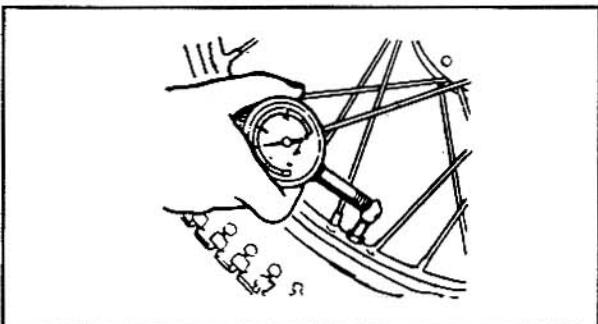
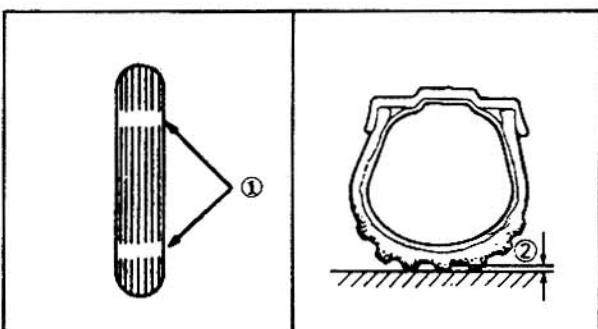


Wear Limit:
1 mm

Wear indicator①
Replacement limit 1 mm

2. Check:

- Air pressure with tyre nozzle in down position as in figure.



	FRONT	REAR
Specification	2.50-18 4PR Nylon	2.75-18 6PR Nylon
Single Rider	22PSI	28PSI
Double Rider	22PSI	32PSI

OVER INFLATED①

—Risky/Poor road holding.

PROPERLY INFLATED②

—Good & safe riding

UNDER INFLATED③

—Causes higher tyre wear & low fuel economy.



CAUTION

An improperly inflated tyre may lead to loss of motorcycle road contact causing accident/injury to rider.

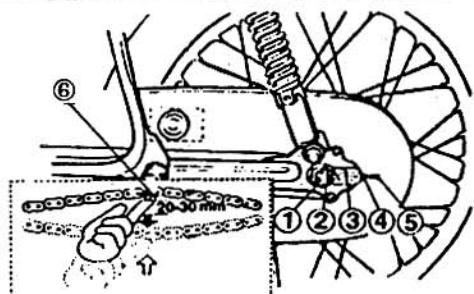


IMPORTANT

- An overloaded motorcycle could cause tyre damage, abnormal wear, and even loss of control.
- Tyre pressure should be checked and corrected under cold conditions (Tyre temperature equals ambient temperature)
- The tyres are suited for normal riding and touring. They are not suited for sustained high speed running or racing.
- Always check tyre condition before riding motorcycle. If badly worn off then replace tyre immediately.
- In case nail/glass/sharp item is embedded in tyre, please ensure same is removed before vulcanising/puncture repair.

DRIVE CHAIN

INSP
ADJ.



SLACK INSPECTION

- Park motorcycle on level ground on central stand.
- Remove rubber cap from inspection window on chain guard.
- Rotate wheel rear several revolutions in forward direction and check total slack upward & downward several times to find "highest point" ⑥



Drive Chain Slack
20~30 mm

2

SLACK ADJUSTMENT

- Park motorcycle on central stand and loosen rear brake adjuster ⑤
- Remove cotter pin ① of rear wheel axle nut with plier.
- Loosen rear wheel axle nut ② and sprocket shaft nut ③.
- Loosen chain puller lock nuts ④ on each side.
- To tighten chain, turn chain puller adjuster(s) ⑤ clockwise & to loosen chain, turn adjuster bolt(s) anticlockwise and push rear wheel forward
- After adjustment, be sure to tighten lock nuts, sprocket shaft nut, and wheel axle nut.
- Insert a **NEW COTTER** pin into the rear wheel axle and bend the end of the pin.



CAUTION

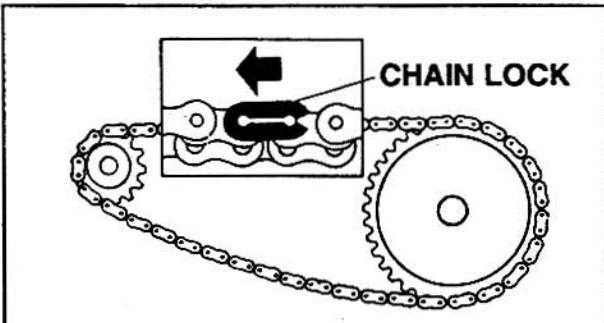
Turn each chain puller adjuster bolt exactly the same amount to maintain correct axle alignment.



IMPORTANT

- After adjusting the drive chain slack, the rear brake pedal free play should always be checked and adjusted, if required.
- There are marks on each side of rear swinging arm and on each chain puller; use them to check for proper alignment.
- Number of matching marks on left side when counted from front side, should be same as on right side.
- Incorrect alignment adversely affects the life of tyres, wheel bearings, sprockets and drive chain.
- The recommended slack in the normal vertical deflection is 20-30 mm with the motorcycle on central stand, on the level ground, without any load on it.

2



WARNING

While refitting chain lock on drive chain, please ensure its closed end is always in direction of chain rotation.



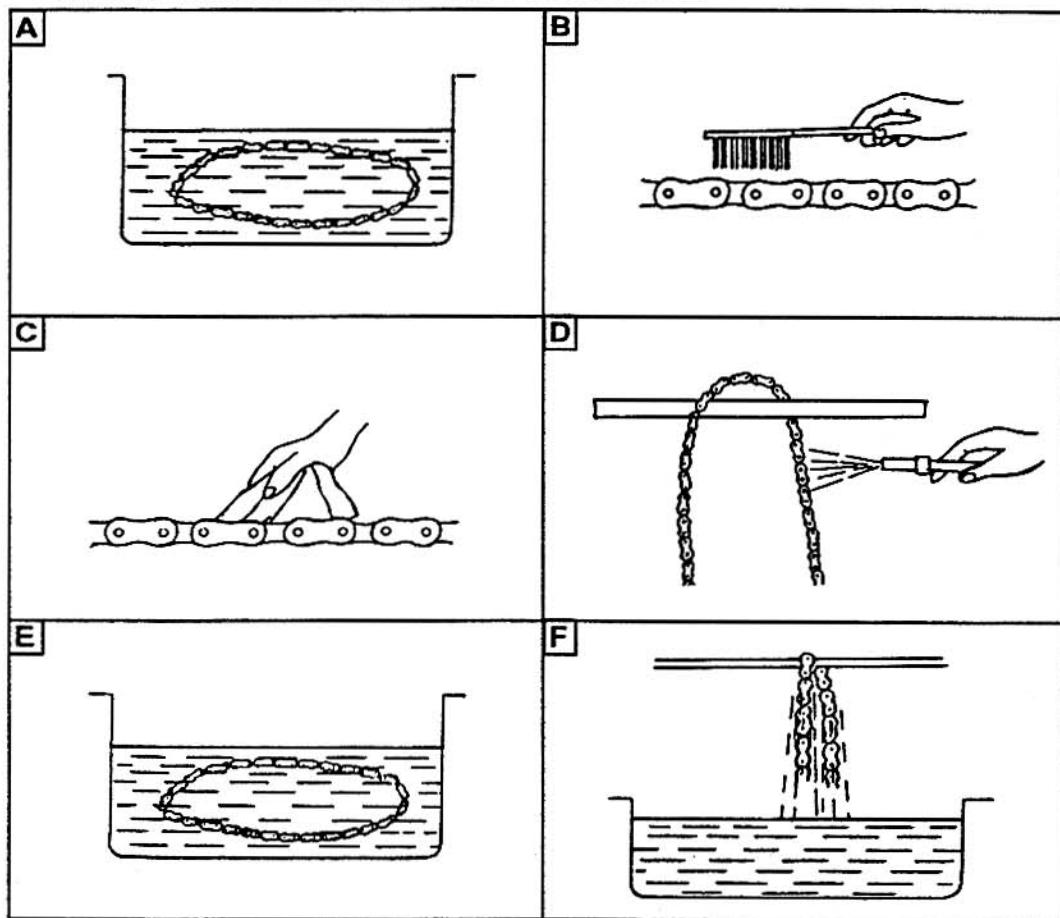
IMPORTANT

Ensure configuration of drive chain to be same when assembled.

DRIVE CHAIN MAINTENANCE

INSP
ADJ.

DRIVE CHAIN MAINTENANCE PROCEDURE



2

DRIVE CHAIN CLEANING AND LUBRICATION

1. Remove the drive chain from motorcycle.
2. Dip the drive chain in kerosene oil for about 20 minutes to loosen the dirt from internal surfaces as shown in Figure A.
3. Clean with wire brush shown in figure B.
4. Dip it thoroughly in clean kerosene oil.
5. Wipe it with fine cloth as shown in Figure C.
6. Hang it vertical and dry it by using compressed air as shown in Figure D.
7. Dip the chain in 20W/ 40 oil bath, to restore the internal lubrication as shown in Figure E.
8. Hang the chain in such a manner that the excessive oil drips off into the oil bath as shown in the figure. F.
9. Inspect the chain for wear, IF DAMAGED OR WORN, THE DRIVE CHAIN ALONG WITH THE SPROCKETS SHOULD BE REPLACED AS A SET.



IMPORTANT

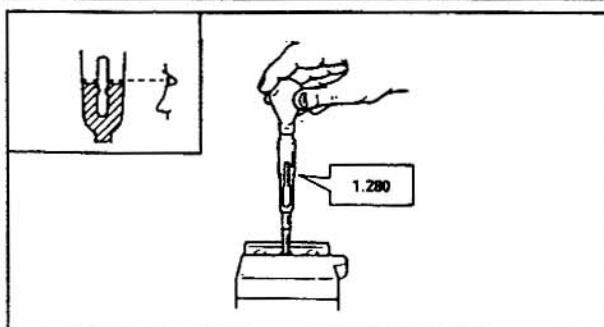
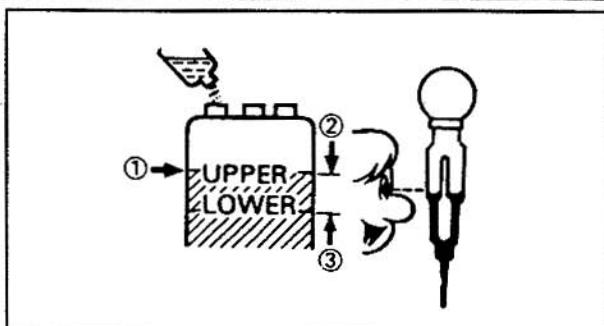
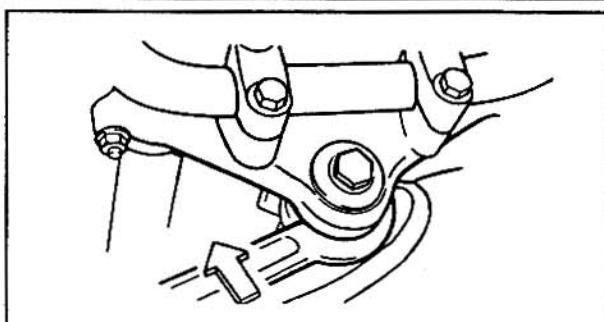
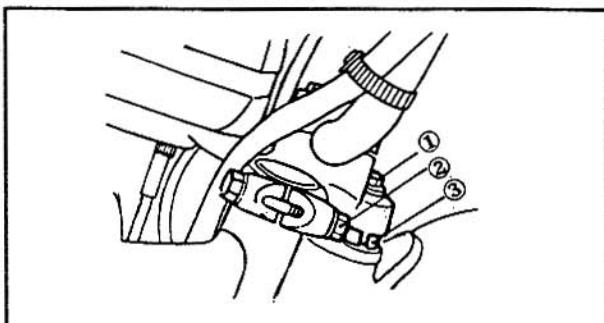
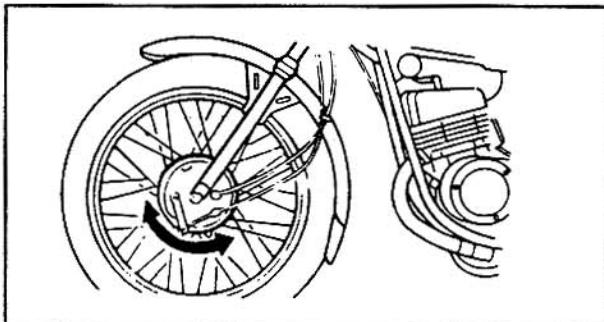
- Never insert a new link(s) in a chain that has elongated appreciably since pitch of new link will be shorter than that of other links resulting in sprocket damage and finally drive chain.
- Always replace drive chain, driving & driven sprockets as set.



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STEERING AND BATTERY

2



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:

3.1Kg.m, (22 ft.lb):

Front Fork Pinch Bolt ②:

2.0Kg.m, (14 ft.lb)

ELECTRICAL

BATTERY

Fluid Level

1. Check:
 - Fluid level ① & see if terminals are tight. Fluid level should be between upper ② and lower level line ③

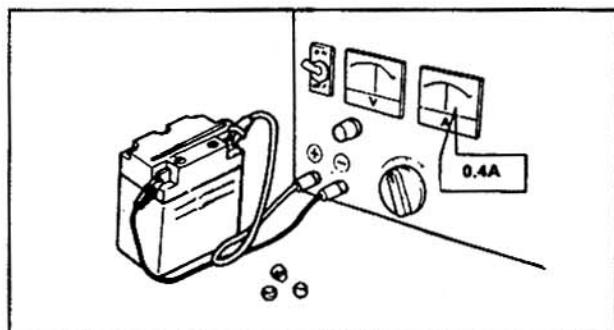
Use only distilled water for refilling. Be sure to remove the negative terminal first.

Battery Charging

1. Check:
 - Battery fluid gravity

SPECIFIC GRAVITY

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

BATTERY**INSP
ADJ.****Charging Current: 0.4A 6 Volt
Charging Hours: 10 hours System****2****IMPORTANT**

- If gravity is below specified limit (1.150) recharge battery.
- Whenever battery is not in circuit, the head light switch must be shifted to 'ON' position otherwise neutral light will blow off and RR unit will get damaged.
- While checking electricals always ensure that the fuse is in circuit and battery is fully charged.



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2

SPECIAL NOTES

- Always use a new cotter pin on the axle nut.
- Always use standard recommended make and type of spark plug only.
- Turn each puller adjuster bolt exactly the same amount to maintain correct axle alignment.
- While refitting the chain lock, please ensure that its closed end should always be in the direction of chain rotation.
- Do not add any chemical additives. Gear Box Oil also lubricates the clutch, and additives could cause the clutch to slip.
- Dirty air filter element causes excessive fuel consumption and power loss. In case the air filter element is torn or cut from any place, the same should be replaced with a new one immediately. The Engine should never be run without a properly installed air filter element, as otherwise it may result in overheating and damage to the Engine.



CHAPTER 3

ENGINE OVERHAUL

ENGINE DISASSEMBLY

CYLINDER HEAD AND CYLINDER	3-1
PISTON	3-1
FLY WHEEL MAGNETO	3-1
CLUTCH	3-2
KICK STARTER	3-2
SHIFT SHAFT	3-3
CRANKCASE	3-3
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CRANK SHAFT	3-4

INSPECTION AND REPAIR

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CYLINDER	3-5
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ENGINE ASSEMBLY AND ADJUSTMENTS

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ENG

3

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

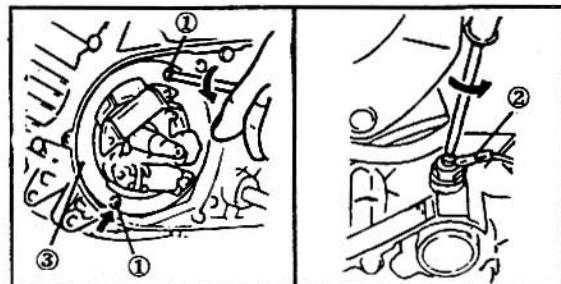
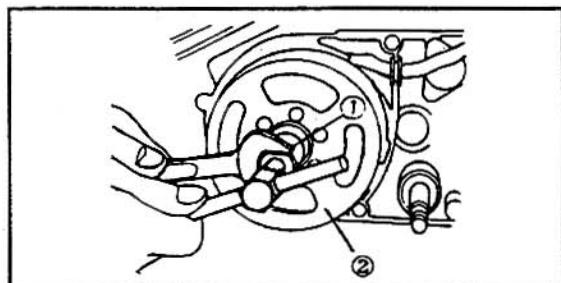
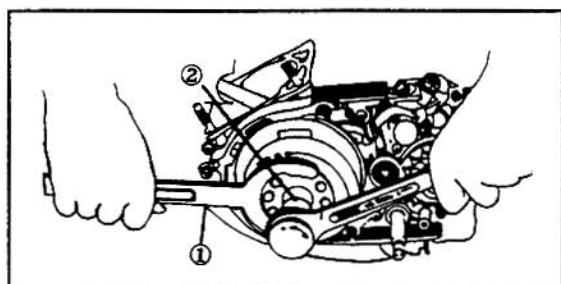
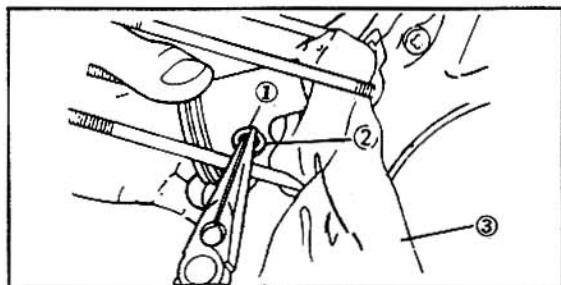
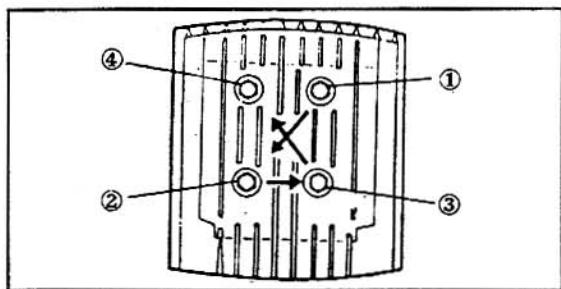


ENGINE DISASSEMBLY

CYLINDER HEAD AND CYLINDER

1. Remove

- Cylinder head nuts 4 Nos. along with washers.
- Cylinder head
- Cylinder nuts
- Cylinder



PISTON

1. Remove

- Piston pin clips ①
- Piston pin ② using Piston Pin Replacer-ESM 207
- Piston
- Piston rings

IMPORTANT

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

3

FLYWHEEL MAGNETO

1. Remove:

- Crankcase cover (Left)

2. Attach:

- Flywheel Holding Tool ESM-201 ①

3. Remove:

- Flywheel holding nut ②
- Lock washer
- Washer

4. Attach:

- Flywheel Puller
- ESM-202 ① (Left-Hand-Threads)

5. Remove:

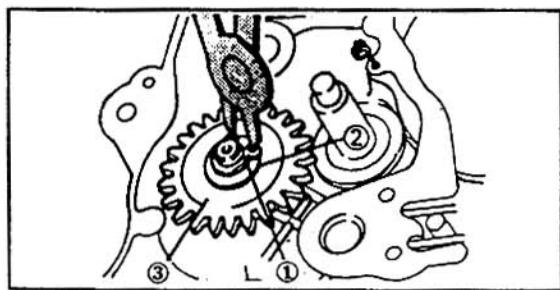
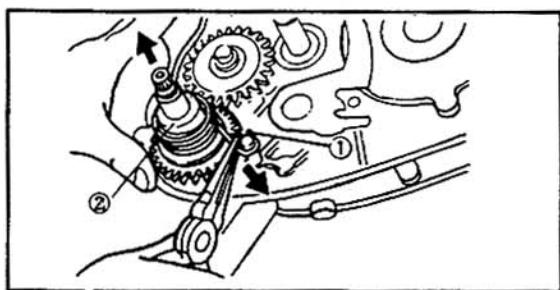
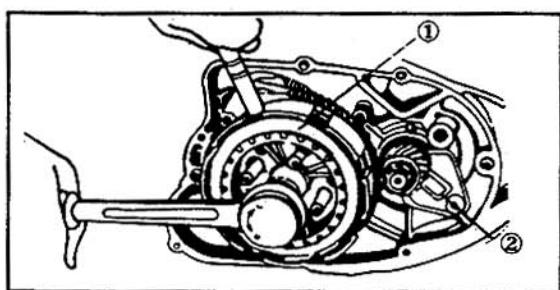
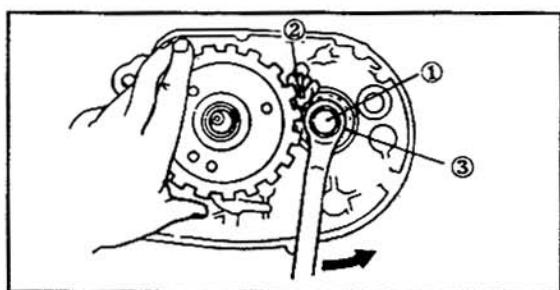
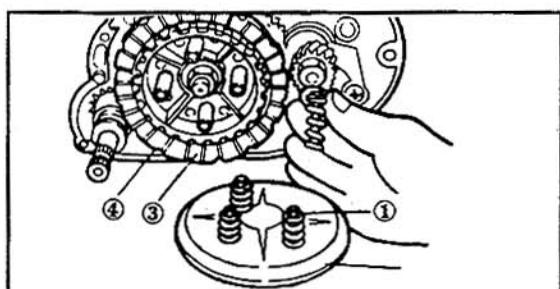
- Flywheel ②
- Woodruff key

6. Remove:

- Stator holding screws ①
- Neutral switch lead wire ②
- Stator assembly ③



3



CLUTCH

1. Remove:
 - Crankcase cover (Right)
 - Clutch spring bolts ①
 - Clutch springs
 - Pressure plate ②
 - Friction plate ③
 - Clutch plate ④
3. Remove
 - Primary drive gear nut ①
 - Use folded rag ②
 - Washer
 - Primary drive gear ③
 - Straight key
 - Spacer

3. Attach:
Clutch Holding Tool
ESM-233 ①

4. Remove:
 - Clutch assembly
 - Oil seal retainer ②

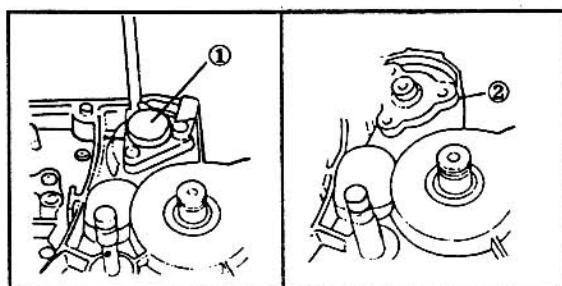
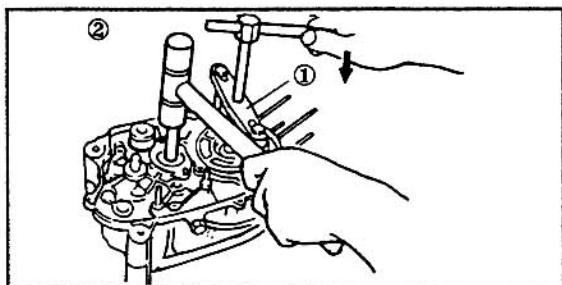
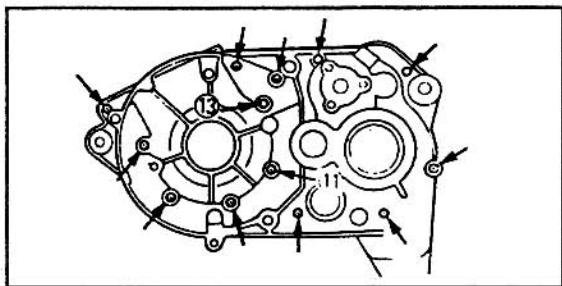
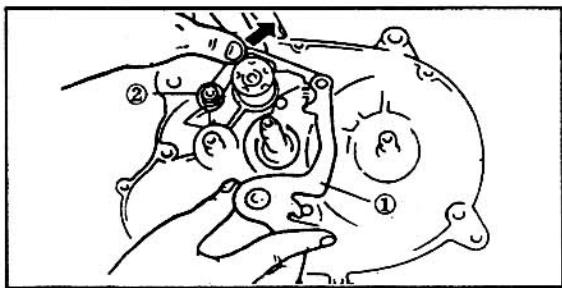
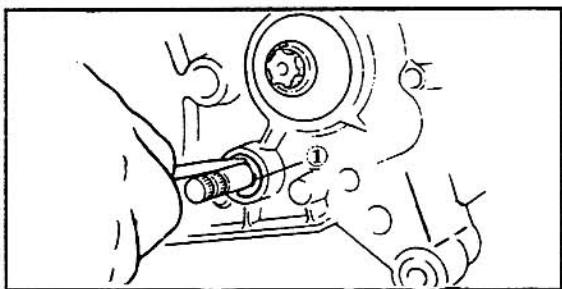
KICK STARTER

1. Unhook:
 - Kick return spring ①
2. Remove:
 - Kick starter assembly ②
3. Remove:
 - Circlip ①
 - Washer ②
 - Kick idle gear ③
 - Washer
 - Circlip



SHIFT SHAFT

1. Remove:
 - Circlip ① (on left side)
 - Washer
2. Remove
 - Shift shaft assembly ①
 - Stopper lever assembly ②
 - Bearing Petainer Plate



3

CRANKCASE

1. Remove
 - Crankcase tightening screws with Engine mounted on Engine Assy. Stand.

2. Attach
 - Crankcase separating tool ESM-265 ① (to the right side crankcase)

IMPORTANT

Make sure the tool body is parallel with the case.

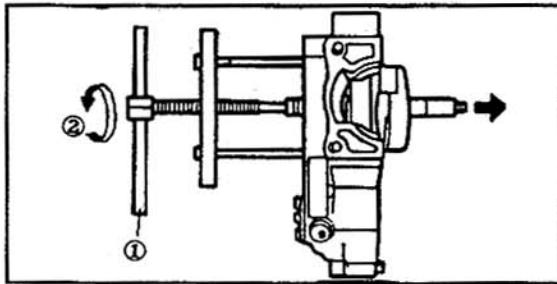
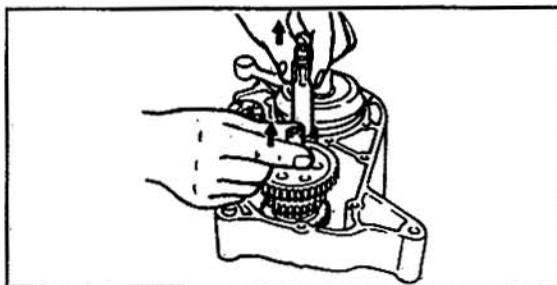
3. Tighten:
 - Securing Bolt ②

TRANSMISSION AND SHIFTER

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



3



1. Remove:

- Transmission assembly

CRANKSHAFT

1. Attach:

- Crankcase separating tool
ESM-265

IMPORTANT

Make sure the tool body is parallel with the case

2. Tighten:

- Securing bolt ①

3. Remove:

- Crankshaft Assy.



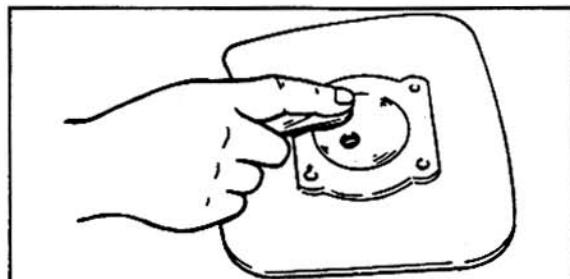
INSPECTION AND REPAIR

INSPECTION AND REPAIR
CYLINDER HEAD

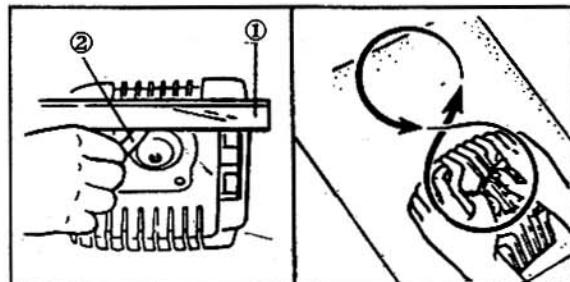
1. Remove:
 - Carbon deposit
Use rounded scraper

IMPORTANT

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



2. Measure:
 - Cylinder head warpage using
① straight edge ② Feeler gauge
Out of specification → Resurface or replace

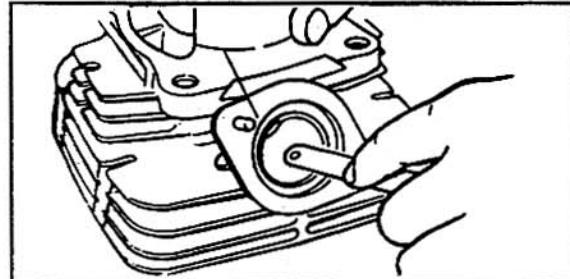
Less than 0.03 mm

CYLINDER

1. Remove:
 - Carbon deposit
Use rounded scraper

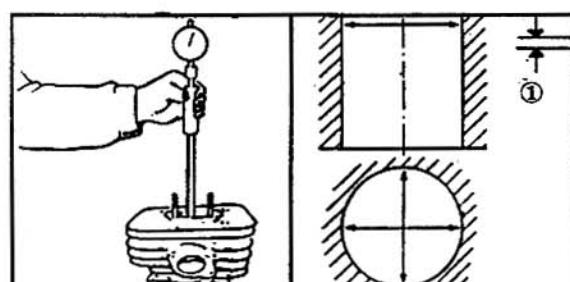
IMPORTANT

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



2. Inspect
 - Cylinder wall for
Wear/Scratches → Rebore or
Replace
3. Measure bore "C" using
cylinder bore gauge 10 mm from
TDC
Out of specification → Rebore

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

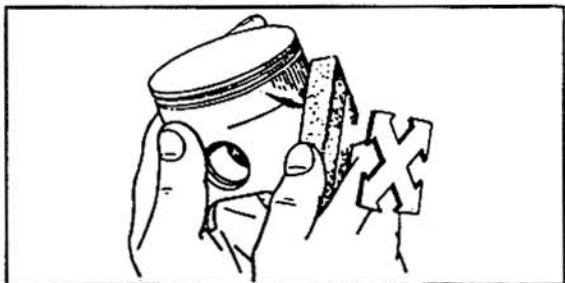


C = Cylinder bore

T = (Maximum C) - (Minimum C)



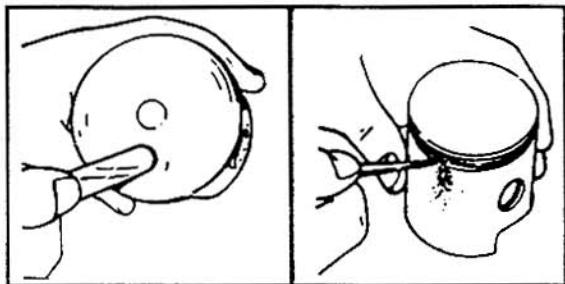
PISTON



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

IMPORTANT

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



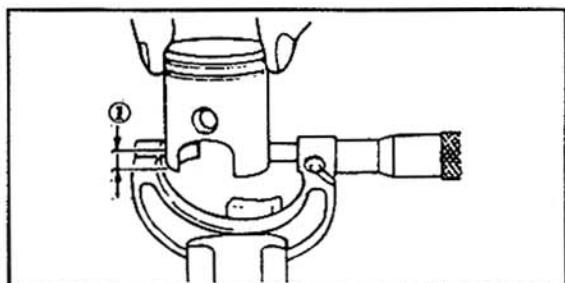
3. Measure:
 - Piston outside diameter "P" with micrometer
Out of specification → Replace

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

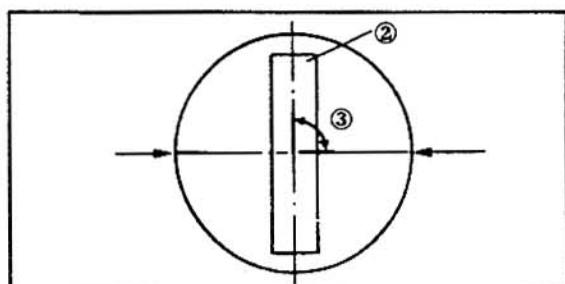
IMPORTANT

Measurement should be made at a point 10 mm above the bottom edge of the piston skirt① & at the perpendicular axis of the piston

- ① 10 mm
② Piston pin
③ 90°



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



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

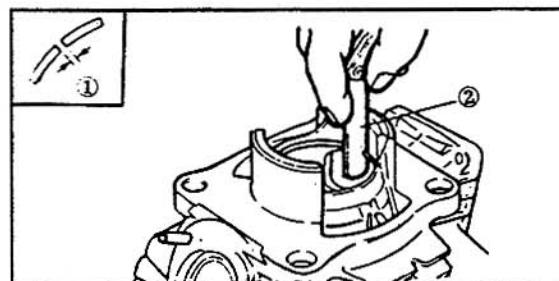
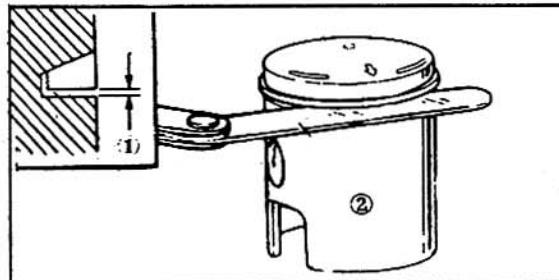
**PISTON RING**

1. Measure:

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



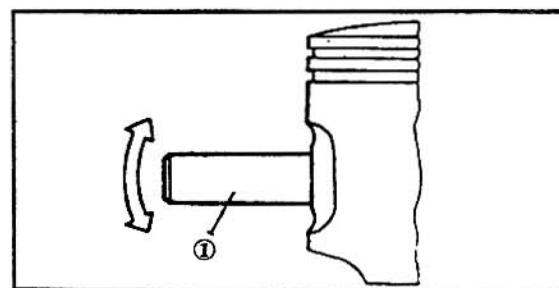
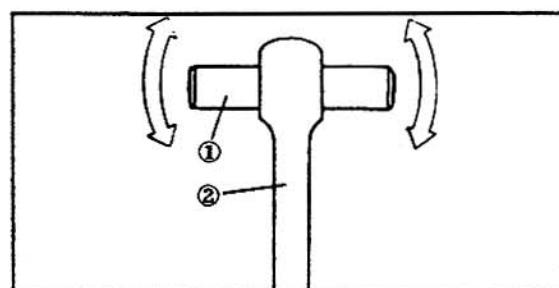
Side Clearance:
0.02 — 0.06 mm



2. Measure:

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

End Gap: (installed)	Standard	Limit
0.15~0.35mm	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.

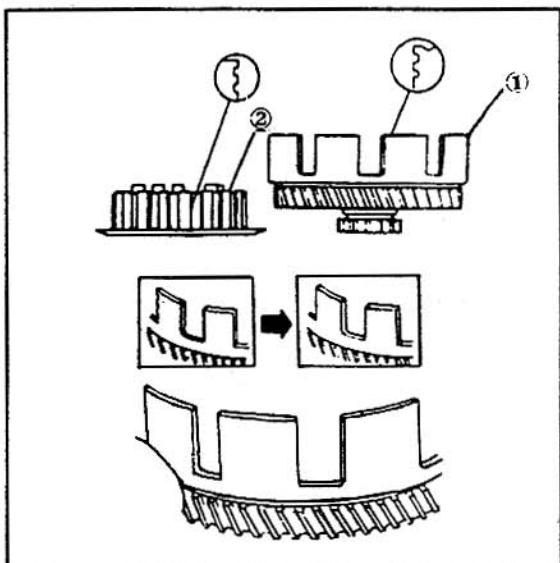
4. Install:

- 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.



IMPORTANT

Do not clean with petrol

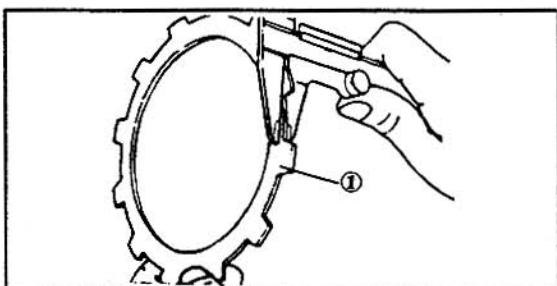
Clutch Boss

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



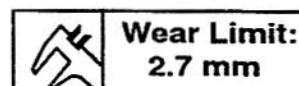
IMPORTANT

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.

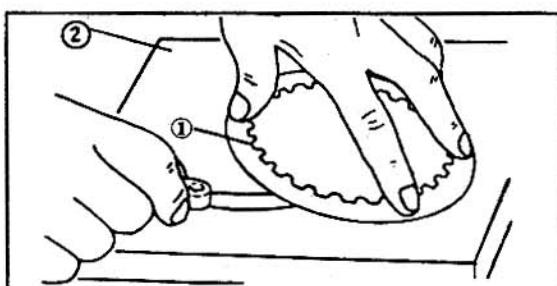


Wear Limit:
2.7 mm



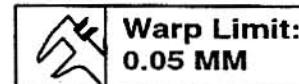
IMPORTANT

While riding ensure the clutch is not partially disengaged as this will damage friction plate

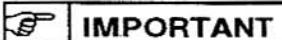


Clutch Plate

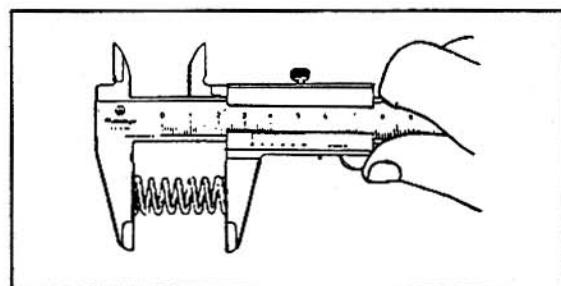
1. Measure:
 - Clutch plate ① warpage
Use surface plate ② and feeler gauge.
Out of specification → Replace.



Warp Limit:
0.05 MM



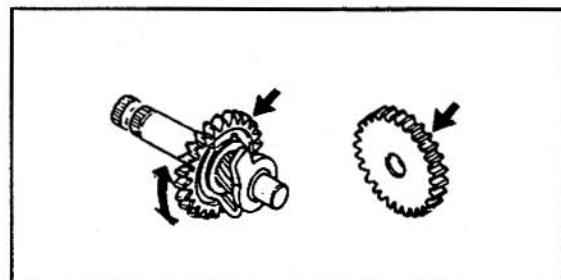
- Clutch lever must always be released slowly to avoid jerks
- While riding ensure that clutch is not partially engaged as this will not only damage friction plates but also increase fuel consumption.

**Clutch Spring**

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



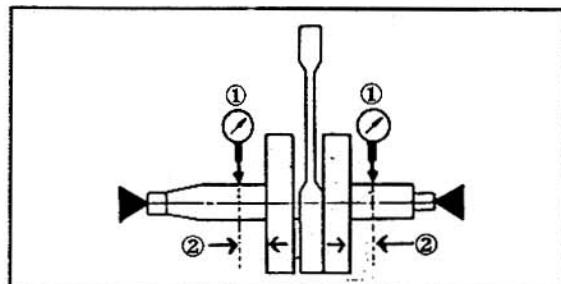
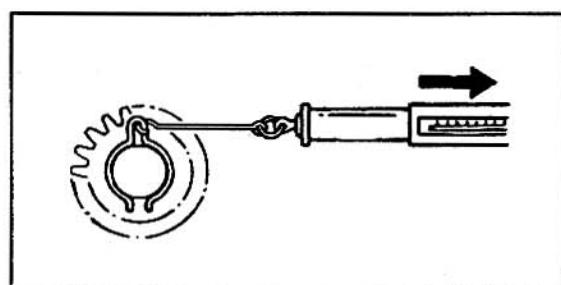
Minimum Length:
33mm

**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.



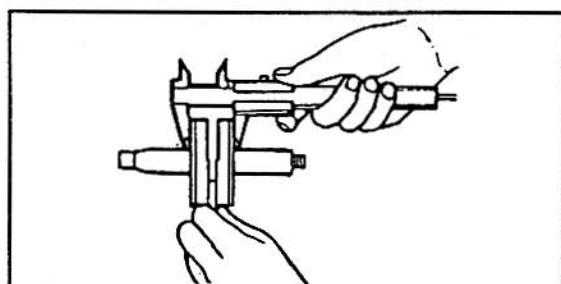
Kick Clip Friction Force:
0.8~1.2 kg

**CRANKSHAFT**

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



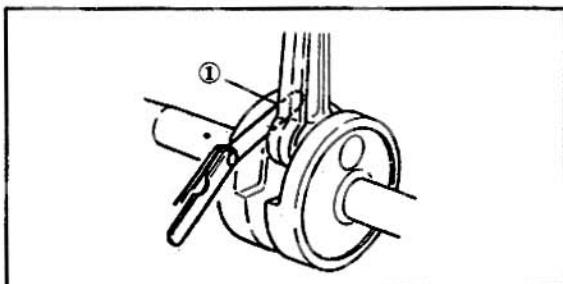
Runout Limit:
0.03 mm



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



Crank Width:
55.90~55.95 mm

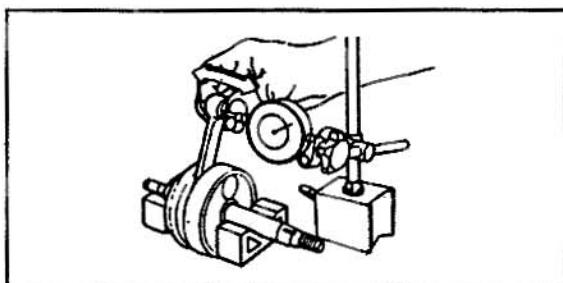


4. Measure:

- Big end side clearance
Use feeler gauge ①
Out of specification → replace.



Big End Side Clearance:
0.2~0.7 mm

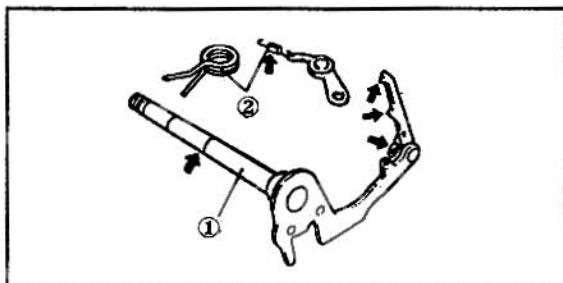


5. Measure:

- Small end free play
Out of specification → Replace.



Small End Free Play:
1.5~2.0 mm

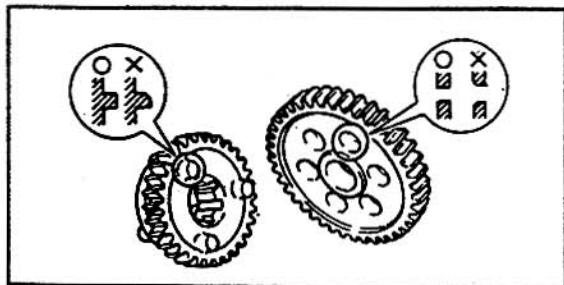
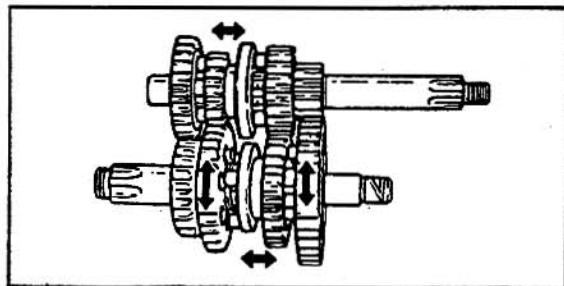
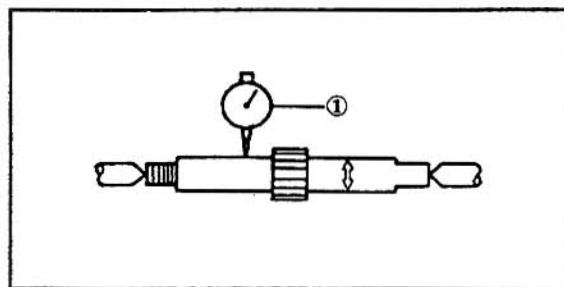
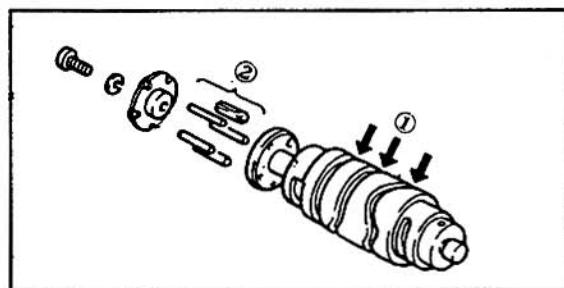
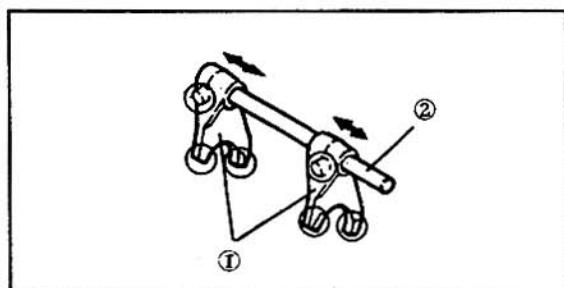
**TRANSMISSION****Shift Shaft**

1. Inspect:

- Shift shaft ①
 - Springs ②
- Wear/Bend → Replace.

**IMPORTANT**

- Crankshaft & connecting rod to be replaced as a set after above parameters are checked.
- Repair of either crankshaft or connecting rod will affect engine performance.

**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 fork and/or guide bar.
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

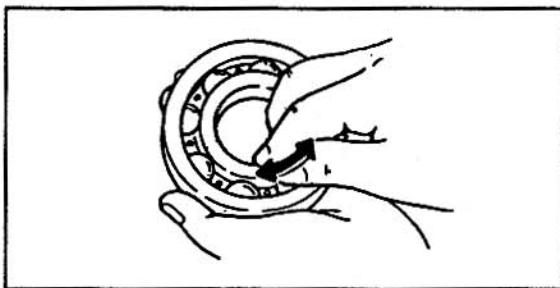
1. Measure:
 - Axle runout Use Centering device and Dial Gauge ① Out of specification → Replace.



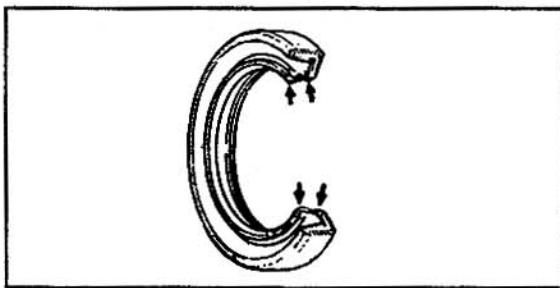
Runout Limit:
0.1 mm

Gears

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

**BEARING AND OIL SEALS**

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



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

**IMPORTANT :**

Always replace crankshaft oil seals.



ENGINE ASSEMBLY AND
ADJUSTMENT

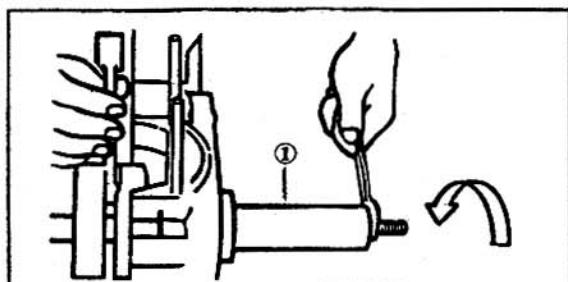
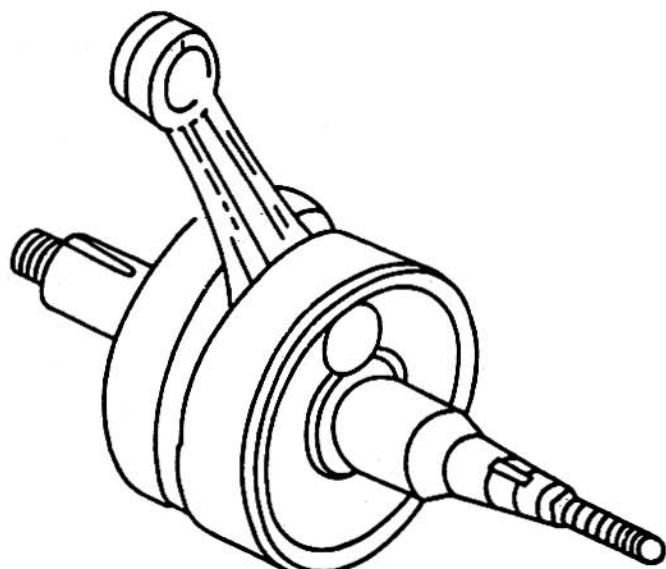


IMPORTANT

Before assembling the engine
thoroughly wash the crankshaft in
mild solvent (petrol/kerosene)

CRANKSHAFT ASSY

3

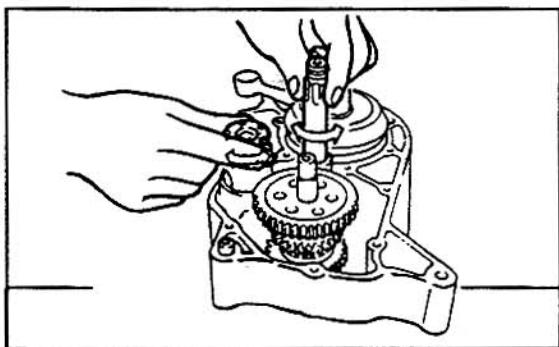
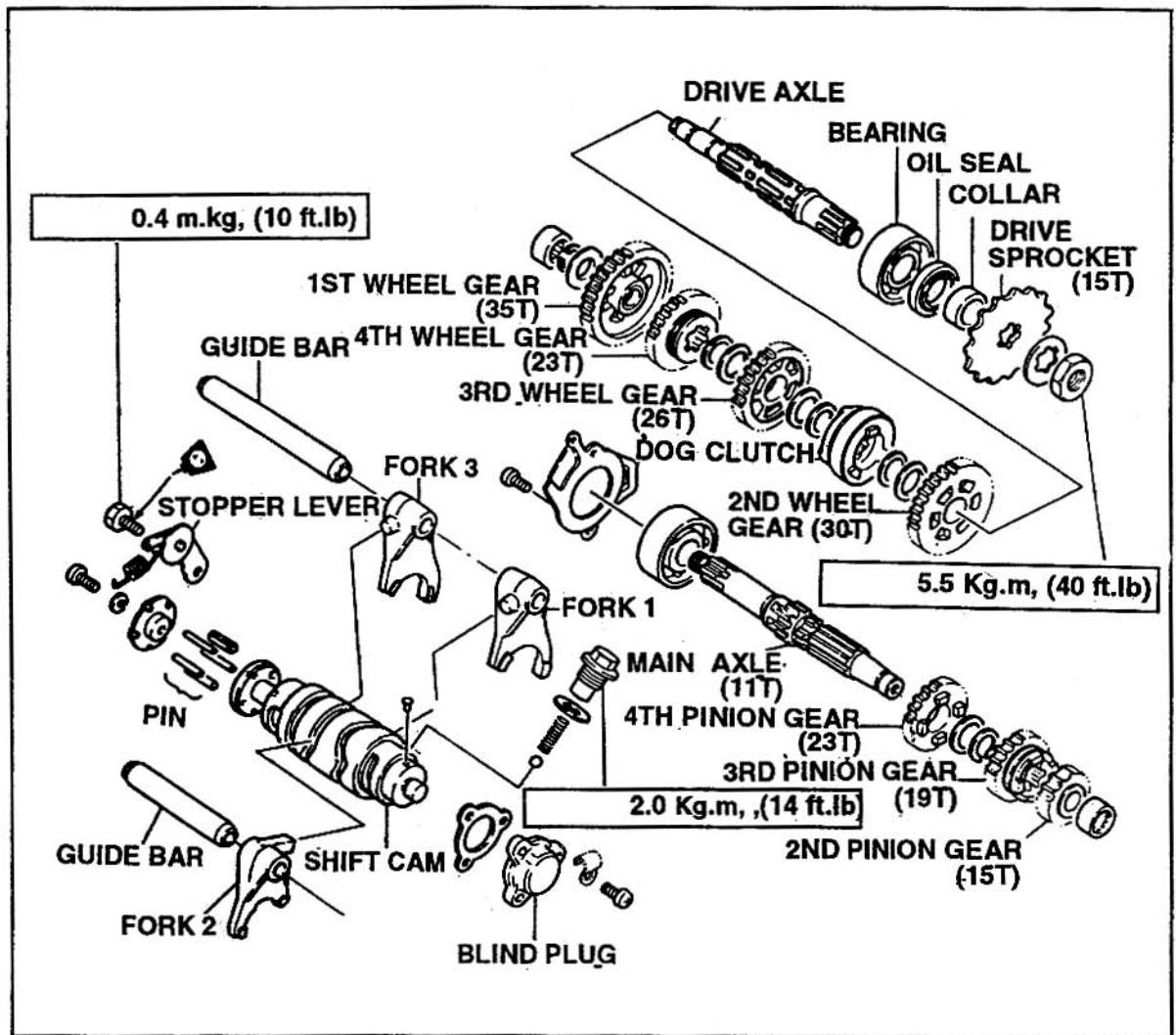


1. Attach:
 - Crankshaft Installing Tool
ESM-266 ①
(to the left side crankcase)
2. Tighten:
 - Nut of the installing tool
Hold the connecting rod at top dead center.



TRANSMISSION AND SHIFTER

3



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

IMPORTANT

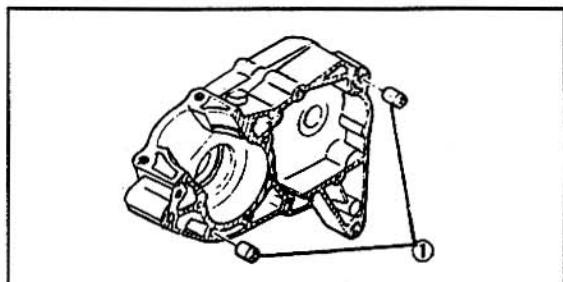
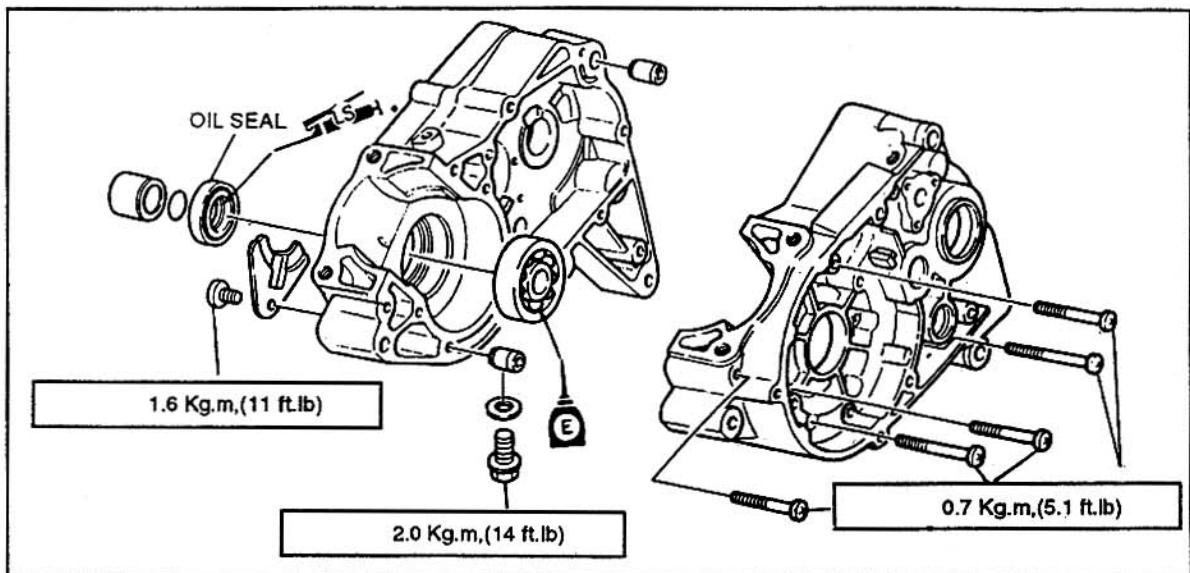
It is not advisable to change gears halfway on gradient, however when absolutely necessary, shift down before you build up too much speed.

ENGINE ASSEMBLY AND ADJUSTMENTS



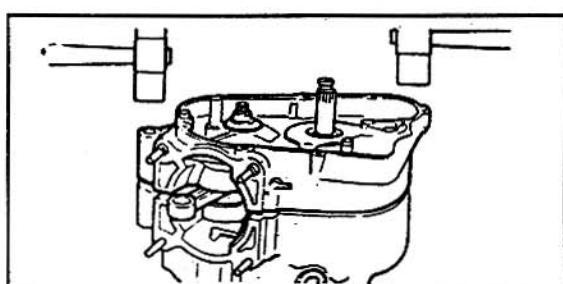
ENG

CRANK CASE ASSEMBLY

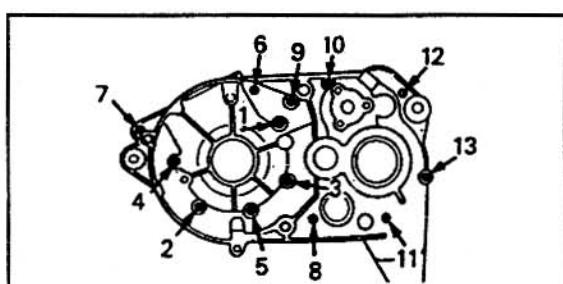


1. Apply:
 - Yamaha 3m Bond (to both crankcase mating surfaces.)

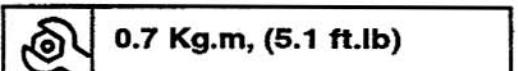
2. Install:
 - Dowel knock pins



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



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



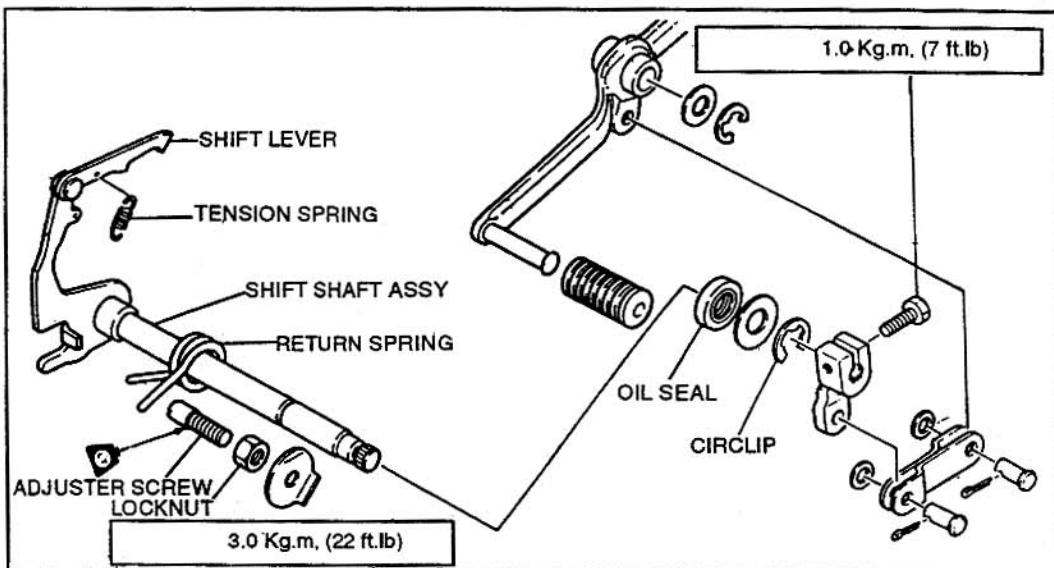
IMPORTANT

Crankcases should always be replaced as a set

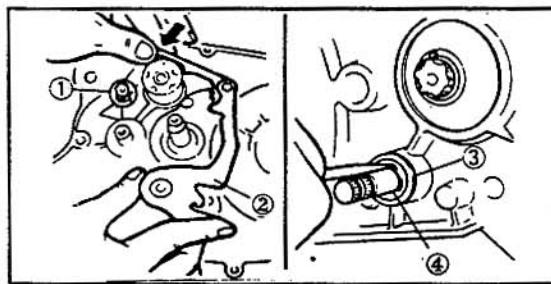
3



SHIFT SHAFT



3

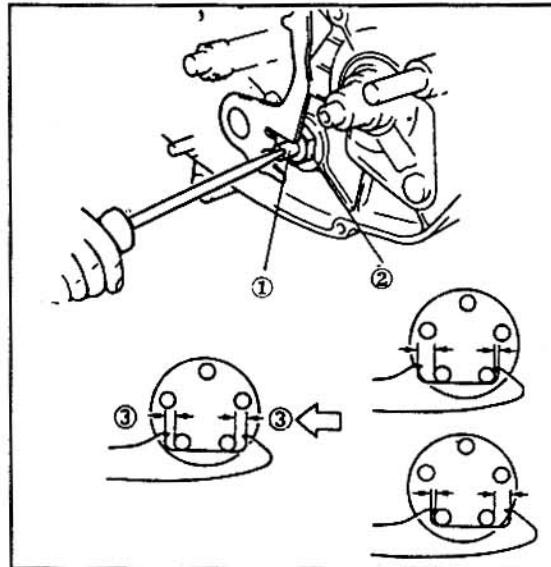


1. Install:
 - Stopper lever assembly ①



1.4 Kg.m, (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.



CAUTION

Do not shift gears without disengaging the clutch and without closing the throttle as the engine and gears could be damaged by high speeds.



IMPORTANT

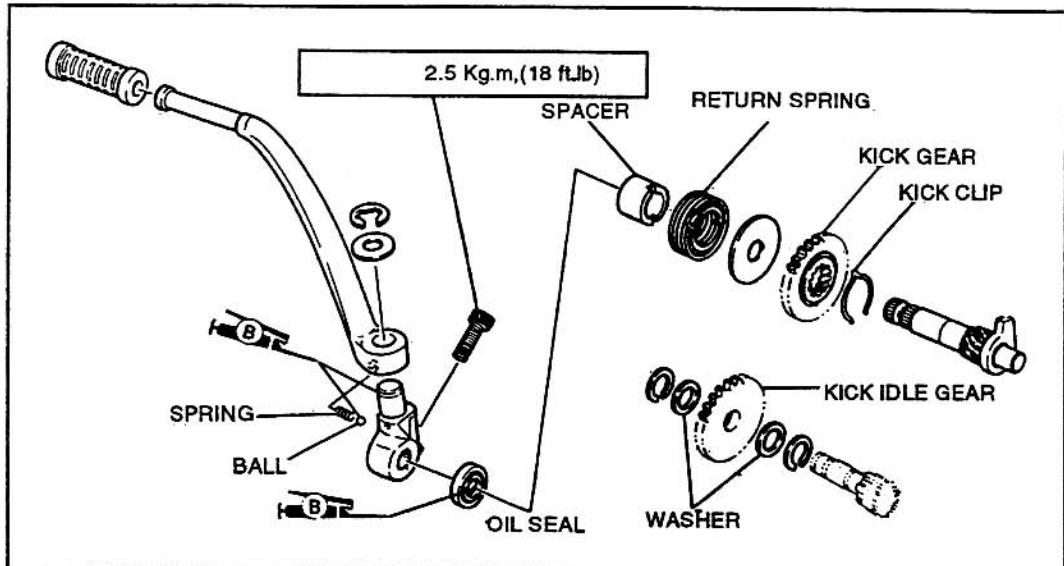
- When gears is in neutral position, the neutral indicator light should slow. If the light does not come on, please contact your COMPANY AUTHORISED DEALERSHIPS.
- Make sure kick start lever is returned to its original position before riding.

ENGINE ASSEMBLY AND ADJUSTMENTS

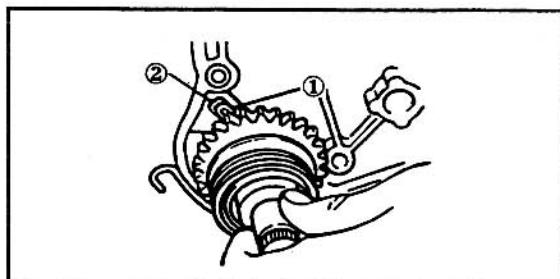


ENG

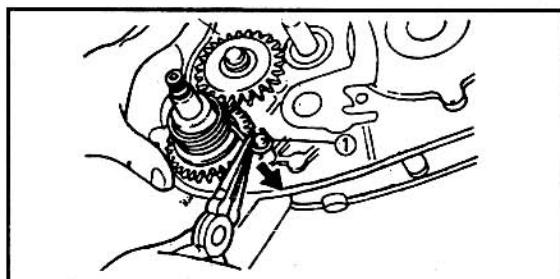
KICK STARTER



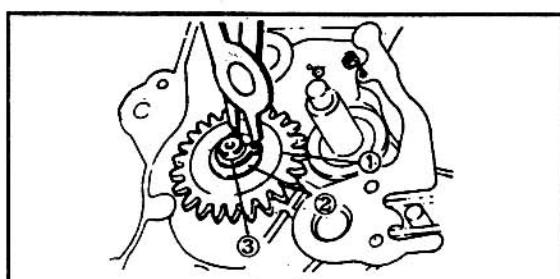
3



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



3. Hook:
 - Return spring ①



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



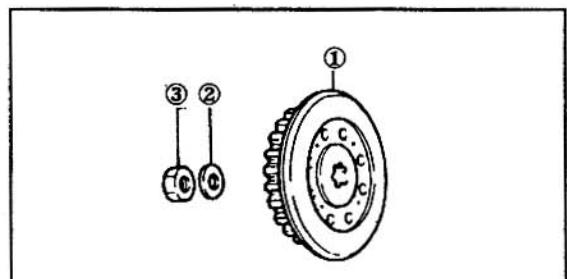
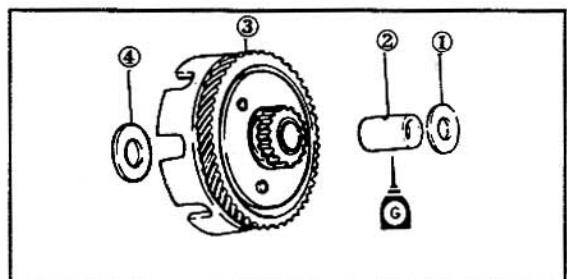
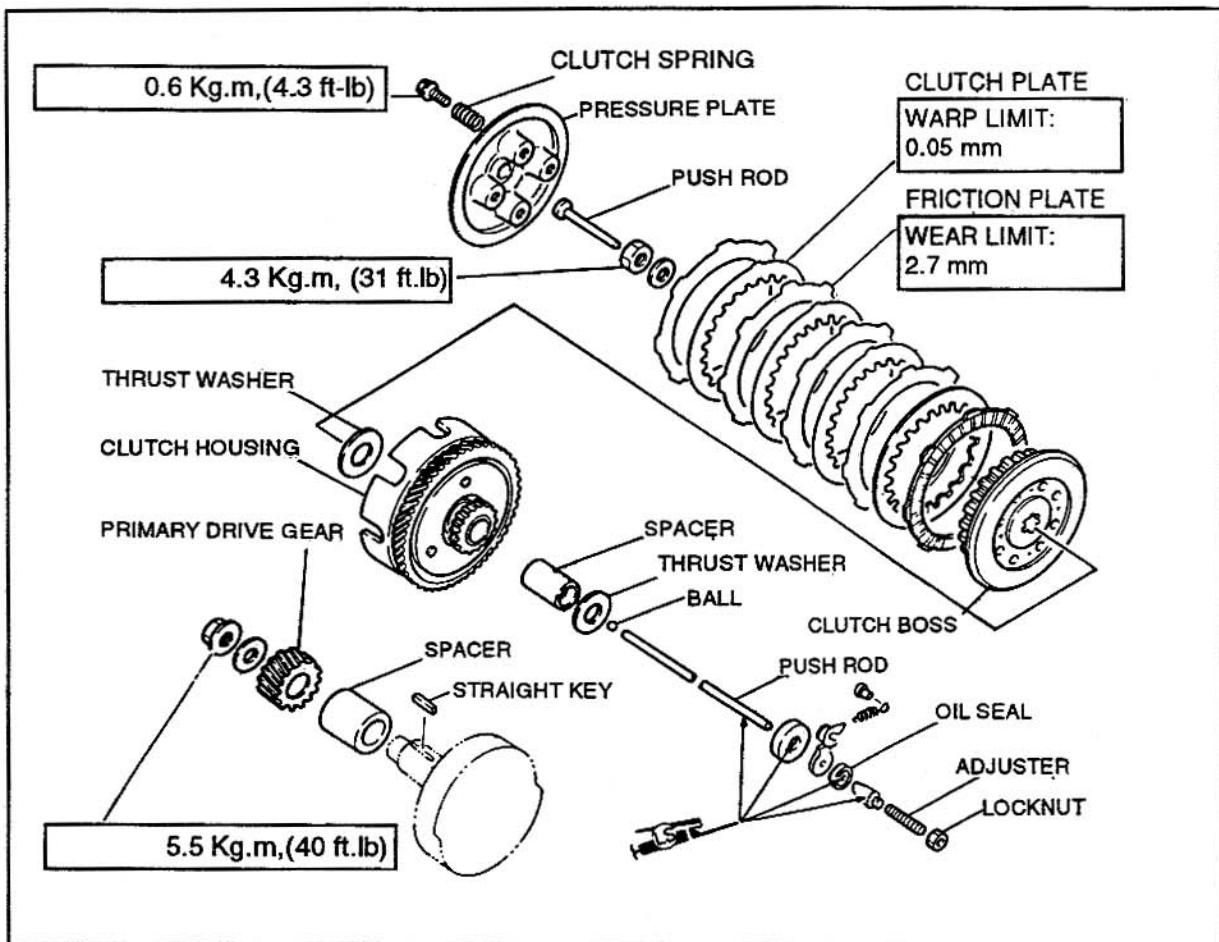
WARNING

• After starting the engine check that the kick lever is returned to its normal position and the arm is folded back.



CLUTCH

3



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

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

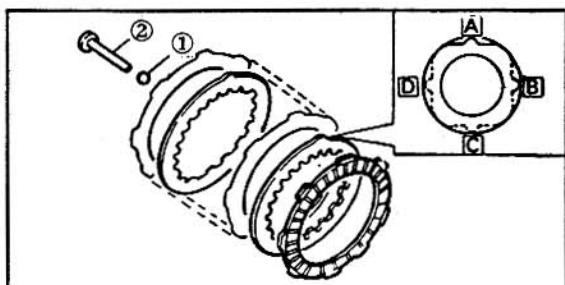


Clutch Boss:
4.3 Kg.m, (31 ft. lb)

ENGINE ASSEMBLY AND ADJUSTMENTS



ENG



3. Install:

- Friction plates -5 Nos.
- Clutch plates -4 Nos.
- Ball ①
- Push rod ②

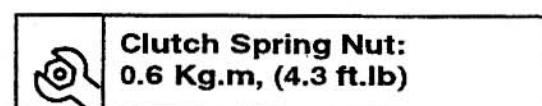
CAUTION:

The clutch plates must be so installed that their cut aways do not overlap each other.

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

4. Install:

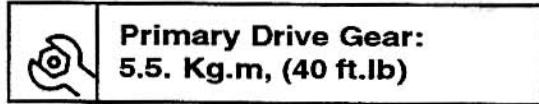
- Pressure plate
- Springs
- Bolts



PRIMARY DRIVE GEAR

1. Install:

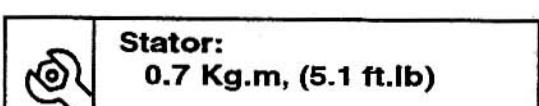
- Spacer ①
- primary drive gear ②
- Straight key ③
- Washer ④
- Nut ⑤



FLYWHEEL MAGNETO

1. Install:

- Stator assembly ①

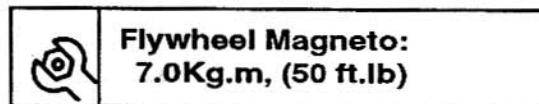


2. Connect:

- Neutral switch lead wire ②

3. Install:

- Woodruff key ①
- Flywheel ②
- Washer, Spring Washer, & Nut ①

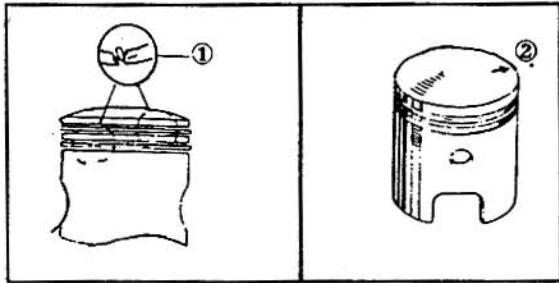
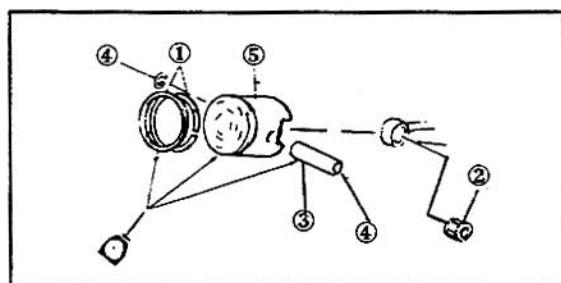
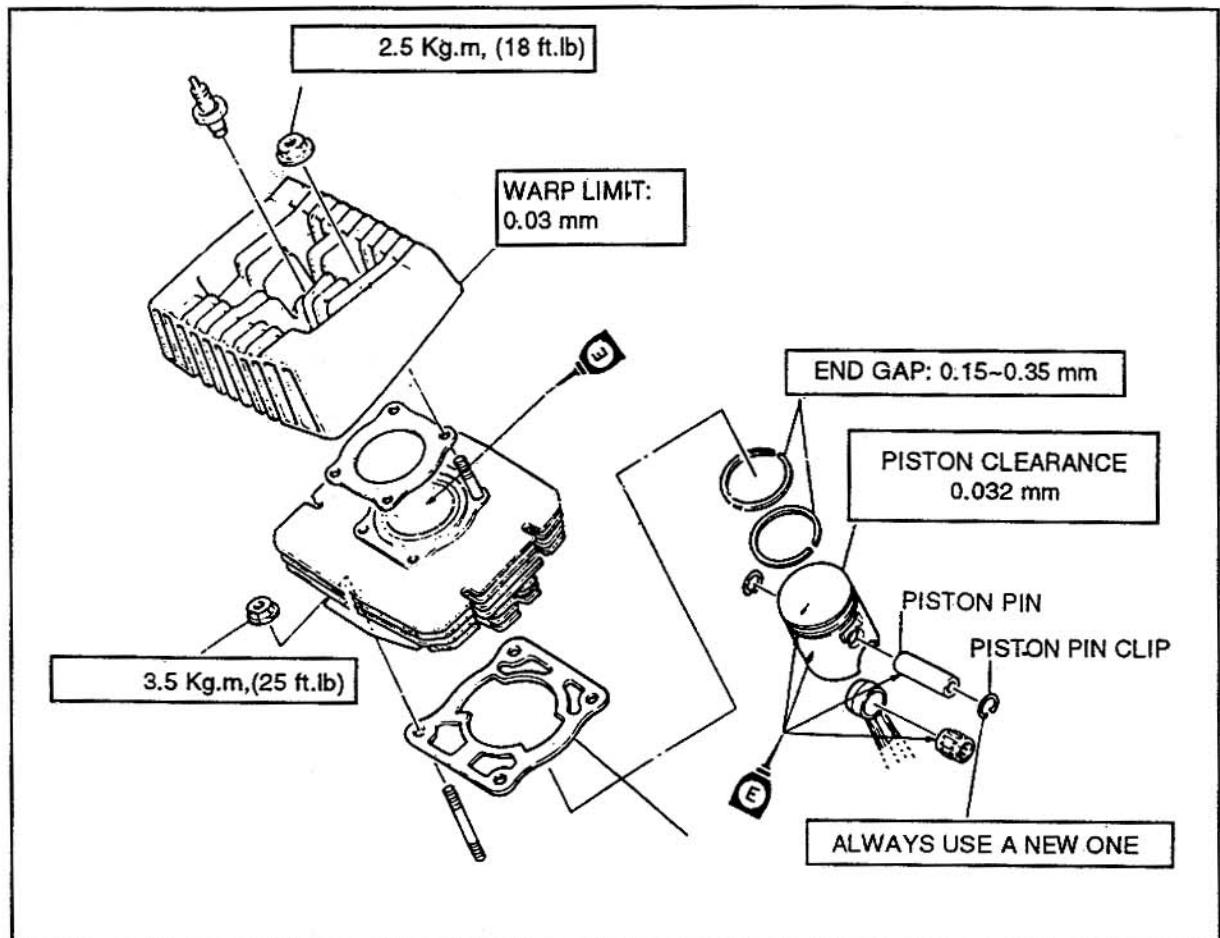


3



PISTON

3



1. Install:
 - Piston rings ①
 - Small end bearing ②
 - Piston pin ③ using Piston Pin Replacer -ESM 207
 - Piston pin clips (New) ④
 - Piston ⑤



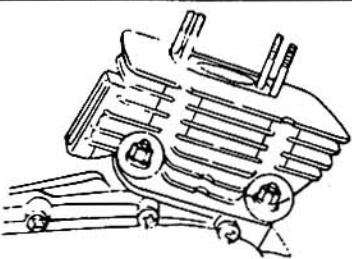
IMPORTANT

- 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



ENG

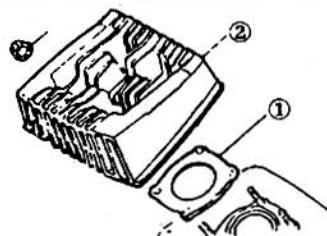


CYLINDER

1. Install:
 - Gasket (New)
 - Cylinder



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



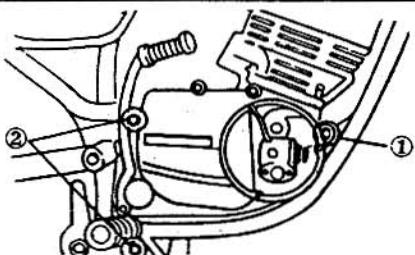
CYLINDER HEAD

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



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

3



ENGINE MOUNTING

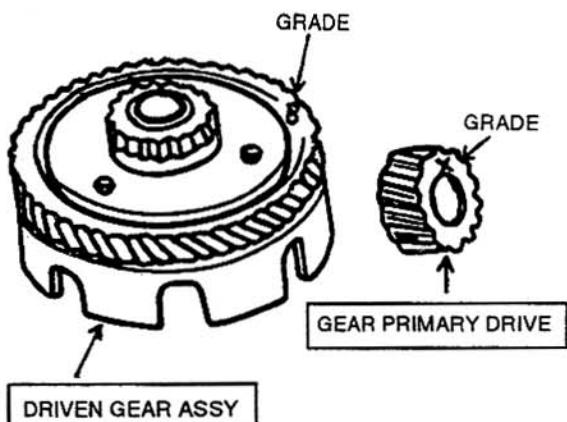


Engine Mount Bolts:
① 3.0 Kg.m, (22 ft.lb)
② 6.0 Kg.m, (43 ft.lb)



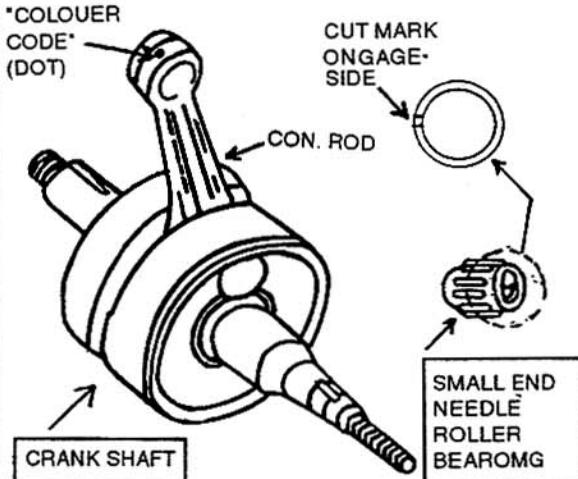
IMPORTANT

- Always install a new head gasket for better engine sealing/compression
- After engine assembly please ensure proper fill-up of gear oil & engine oil of recommended grade and recommended spark plug grade.

COMPONENTS
GRADINGDRIVEN GEAR ASSY. & GEAR
PRIMARY DRIVE GRADING

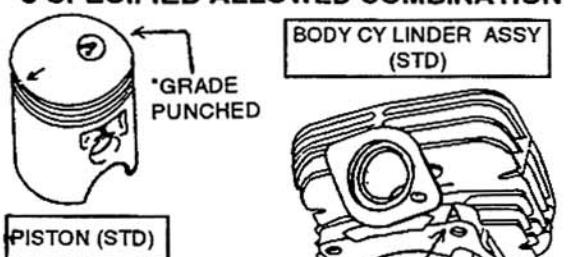
DRIVEN GEAR		G R A D E S					
GEAR PRIMARY DRIVE		A	B	C	D	E	F
G	W	●					
R	X		●				
A	Y			●			
D	Z				●		
E	A					●	
S	B						●

● SPECIFIED ALLOWED COMBINATION



CON. ROD (S.E.)		COLOUR CODES		
NEEDLE ROLLER BEARING (S.E.)		WHITE (DOT)	BLUE (DOT)	RED (DOT)
G	I (I CUT MARK)			●
R				
A	II (II CUT MARK)		●	
D				
E	III (III CUT MARK)	●		
S				

● SPECIFIED ALLOWED COMBINATION



STANDARD PISTON & STANDARD BODY CYLINDER

PISTON (STD)		G R A D E S					
BODY CYL.(Std)		A	B	C	D	E	F
G	A	●					
R	B		●				
A	C			●			
D	D				●		
E	E					●	
S	F						●

● SPECIFIED ALLOWED COMBINATION

EXPLANATORY NOTE: These combinations of grades are applicable for standard 'Pistons' and standard 'Body Cylinders' only oversize (O/S) 'Body Cylinders', the grades of 'Piston' would be determined by the rebored diameter (internal) of the Body Cylinder.



CHAPTER 4

CARBURETION

CARBURETTOR

CARBURETTOR EXPLODED VIEW	4-1
WORKING RANGE OF EACH COMPONENTS	4-1
REMOVAL AND DISASSEMBLY	4-2
INSPECTION	4-2

REED VALVE

INSPECTION	4-3
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CARB

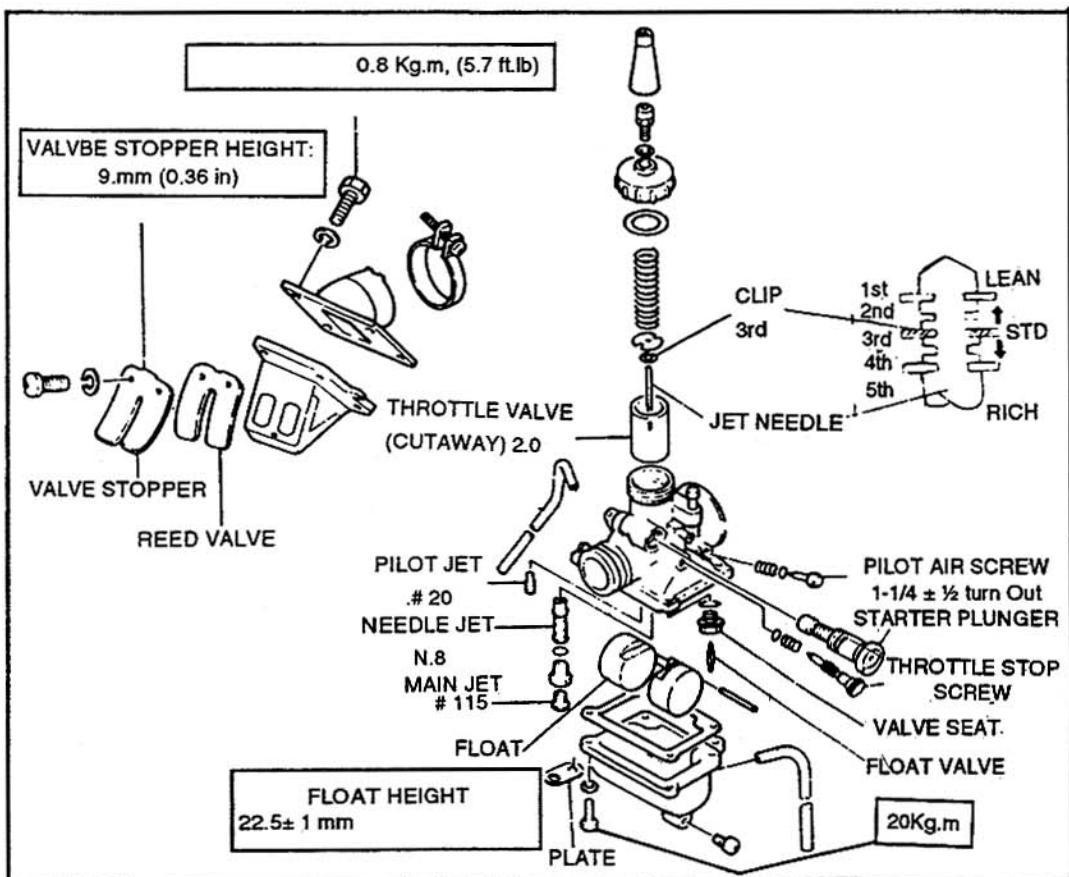
4

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

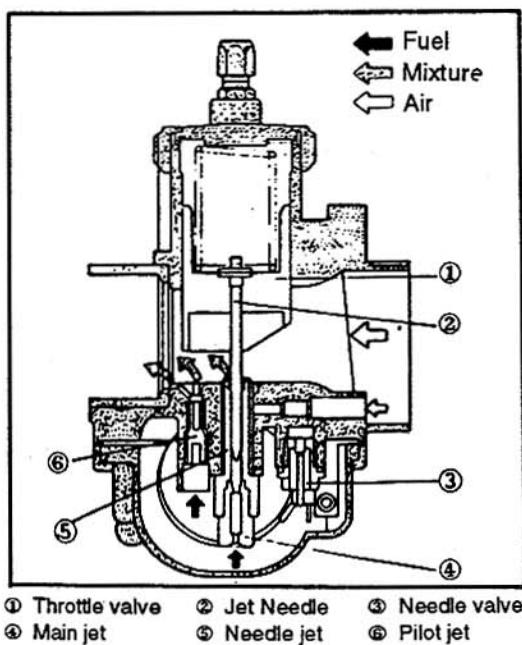


CARBURETTOR

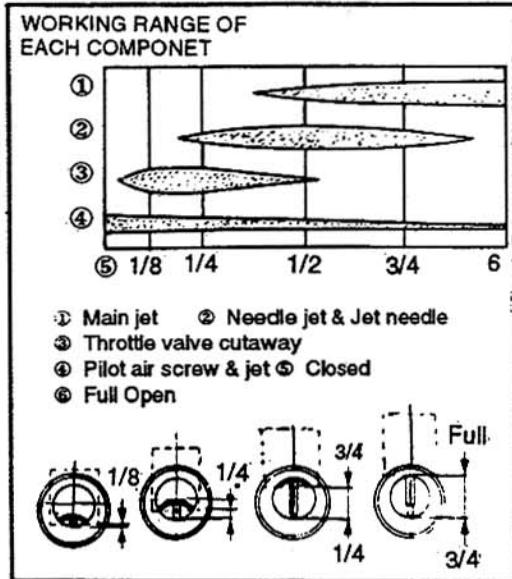
CARBURETTOR



4



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

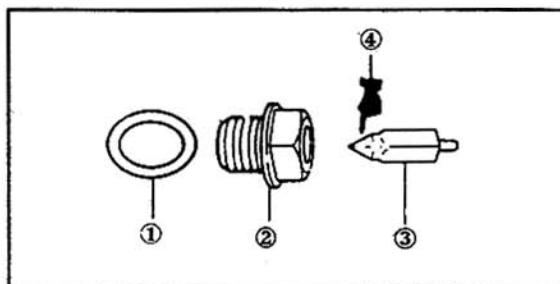
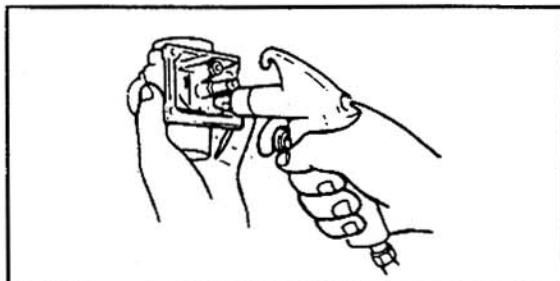
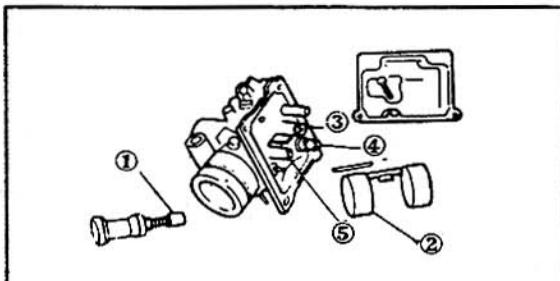
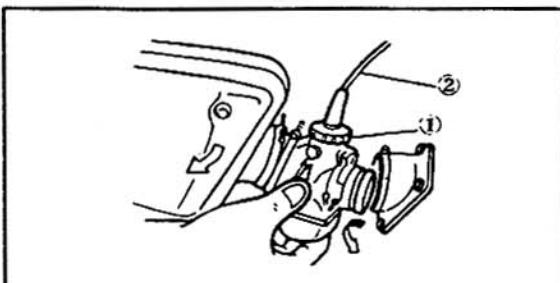
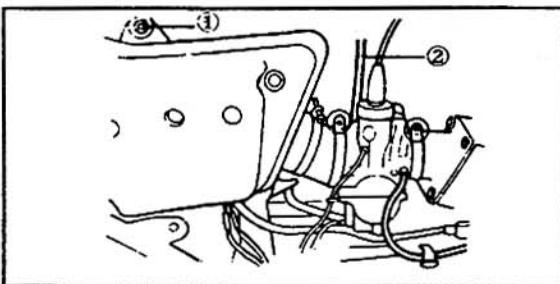




CARB

CARBURETTOR

4



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
 - Throttle valve assy. 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.



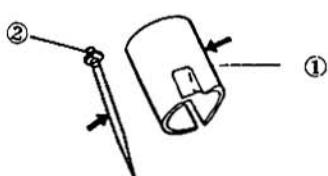
IMPORTANT

- Never clean the jets with a wire.
- Always clean the carburettor from outside before disassembly.
- Improper setting of float height, C-Lock piston, and air screw setting can cause drop in fuel average.

CLEANING AND INSPECTION



CARB



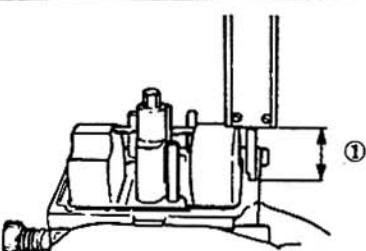
3. Inspect:

- Throttle valve ①
 - Jet needle ②
- Scratch/Bent → Replace



IMPORTANT

'C' Lock on jet needle should be in 3rd groove (from top)



1. Measure:

- Float height ① Without Gasket
- Incorrect → Adjust



Float Height $22.5 \pm 1\text{mm}$



IMPORTANT

The float should be just resting on, but not depressing, the spring loaded needle valve pin.



5. Adjust

- Float height by bending the tang ①

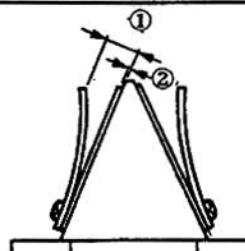


IMPORTANT

If float height is more than specified less petrol in float chamber.

If float height is less than specified more petrol in float chamber.

4



REED VALVE INSPECTION

1. Measure:

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



Valve Stopper Height ① 9mm



Reed Valve Bending Limit ② 0.3 mm



IMPORTANT

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

CAUTION

The Carburetor is preset at the factory after many tests & if the settings are disturbed without having any technical knowledge, poor engine performance and damage may result.



CARB

4

SPECIAL NOTES

- Always use a new cotter pin on the axle nut.
- Always adjust both the right and left shock absorbers to the same position.
- While assembling tyre on wheel rim, keep tyre's balancing yellow mark just in line with tube valve hole and towards the hub side.



CHAPTER - 5

CHASSIS

WHEELS, BRAKES, SPROCKET AND CHAIN

FRONT WHEEL REMOVAL	5-1
REAR WHEEL REMOVAL	5-2
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INSPECTION	5-6
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INSPECTION	5-9
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REAR SHOCK ABSORBERS AND SWING FARM	5-11
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INSPECTION	5-12
INSTALLATION	5-12

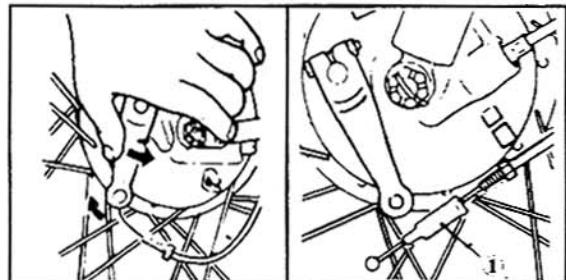
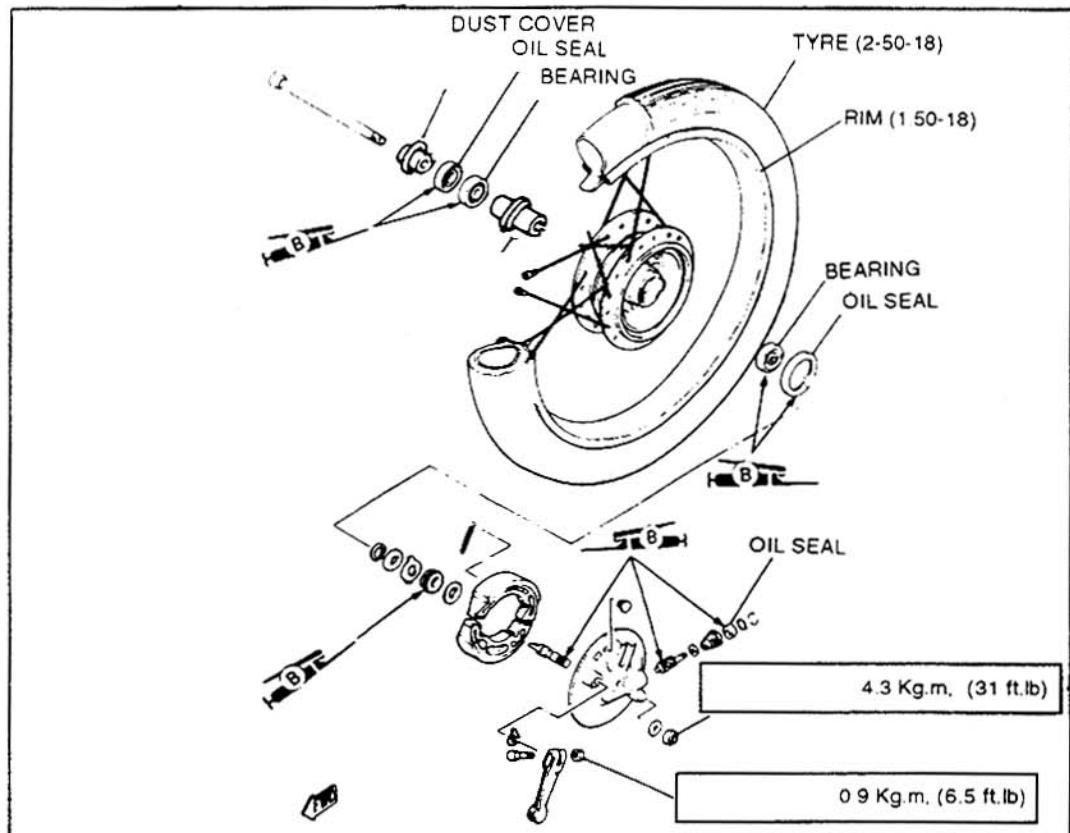


CHAS

**ALWAYS DEMAND ONLY
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MOTORCYCLE.**



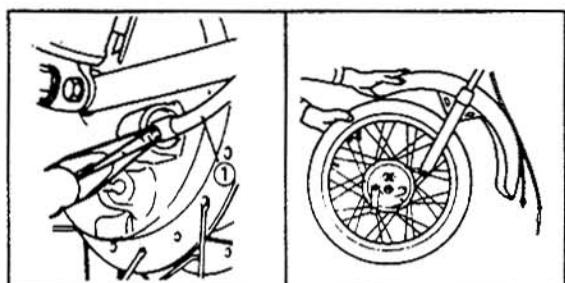
WHEELS, BRAKES, SPROCKET AND CHAIN



FRONT WHEEL REMOVAL

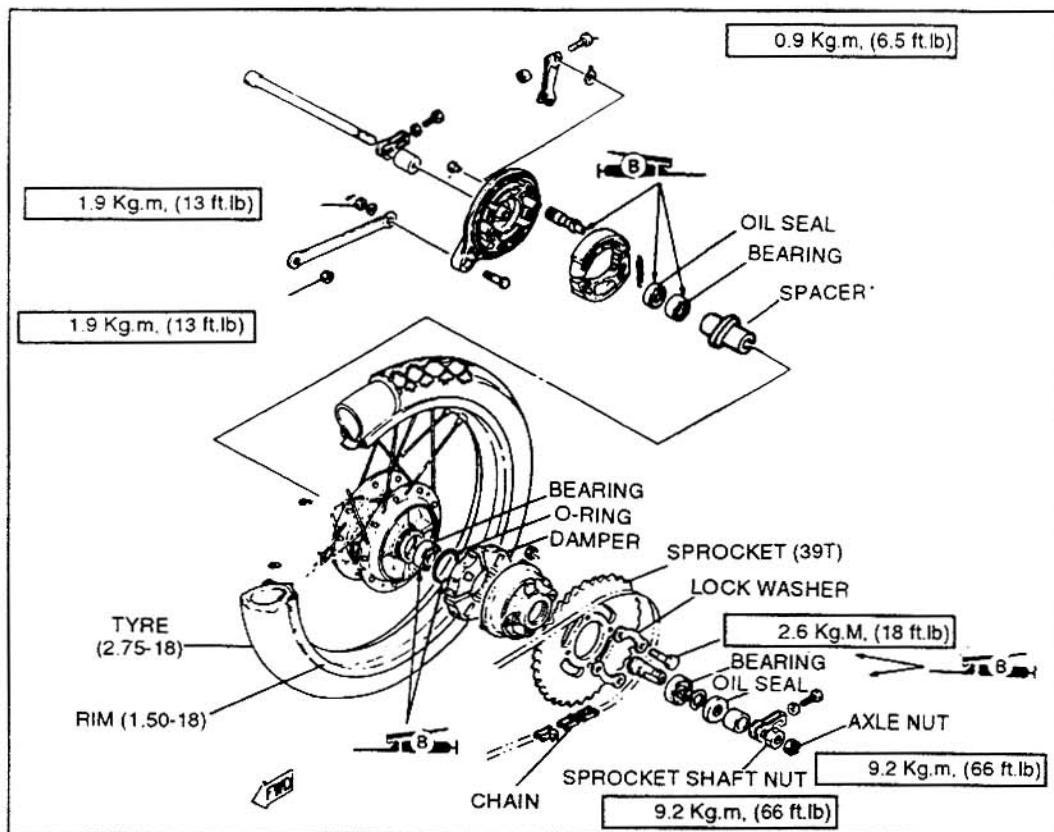
5

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

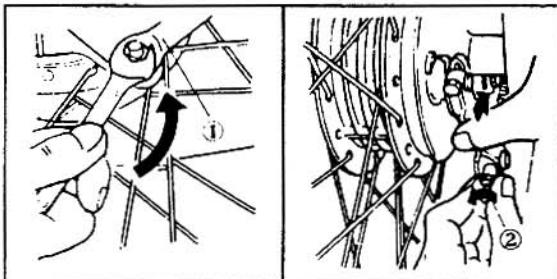




WHEELS, BRAKES, SPROCKET AND CHAIN

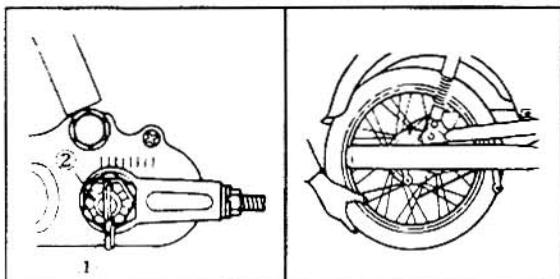


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REAR WHEEL REMOVAL

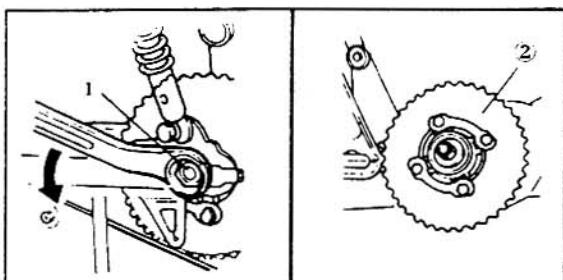
1. Place the motorcycle on its centre stand.
2. Remove:
 - Brake tension bar ①
 - Brake rod ②
4. Remove:
 - Cotter pin ①
 - Axle nut ②
 - Axle shaft
 - Front wheel



REFIT WHEEL IN REVERSE
SEQUENCE

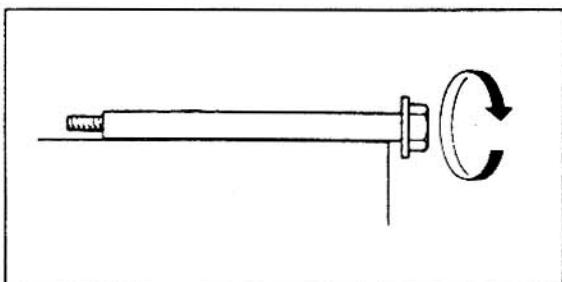


WHEELS, BRAKES, SPROCKET AND CHAIN



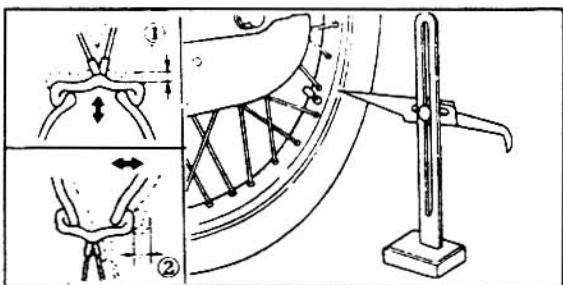
Remove:

- Chain case
- Sprocket shaft nut ①
- Sprocket assembly ②
- Drive chain with chain lock



INSPECTION

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



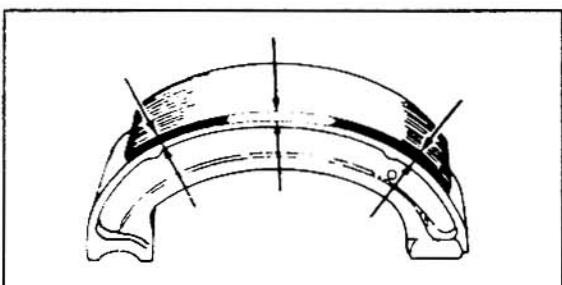
2. Inspect:
 - Wheel
Cracks /Heavily Bent
→Replace.
3. Measure:
 - Wheel runout
Out of specification → Retighten or Replace.



Rim Runout Limits:

Radial ① — 2.0 mm
Lateral ② — 2.0 mm

5



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.

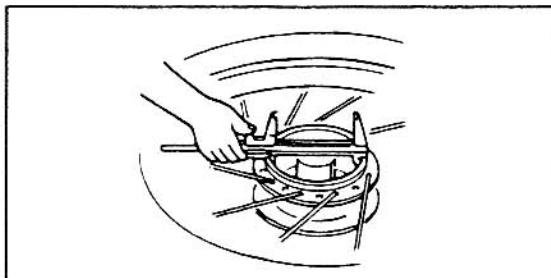
Brake Shoe Wear Limit:
2mm

WARNING

Using only the front or rear brakes is dangerous and can cause skidding and loss of control. Apply both brakes lightly with great care on wet surface or other slippery surfaces and corners. Sudden acceleration, braking or turning may cause loss of control.



WHEELS, BRAKES, SPROCKET AND CHAIN

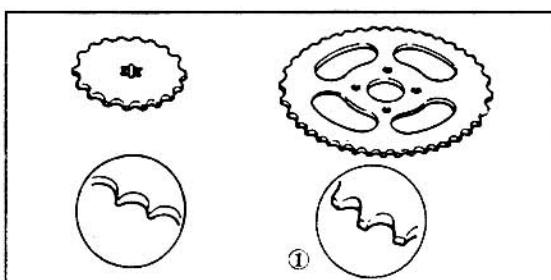


6. Measure:

- Brake drum inside diameter
Out of specification → Replace.



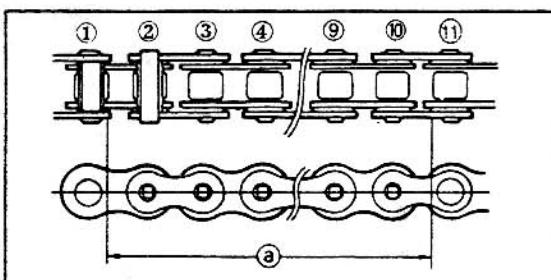
Brake Drum Wear Limit:
131 mm



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 specification → Replace.

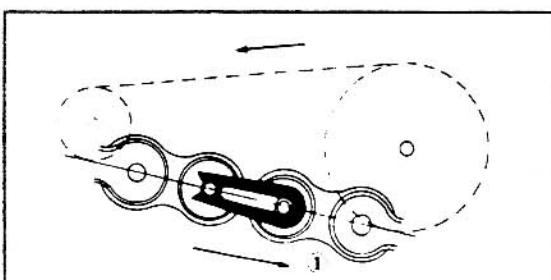


Drive Chain Length (10 Links) Limit:
121 mm

INSTALLATION

1. Install:

- Wheel
Reverse removal steps.



WARNING

Please lubricate chain with multigrade
20W/40 oil

Note the following installation points:

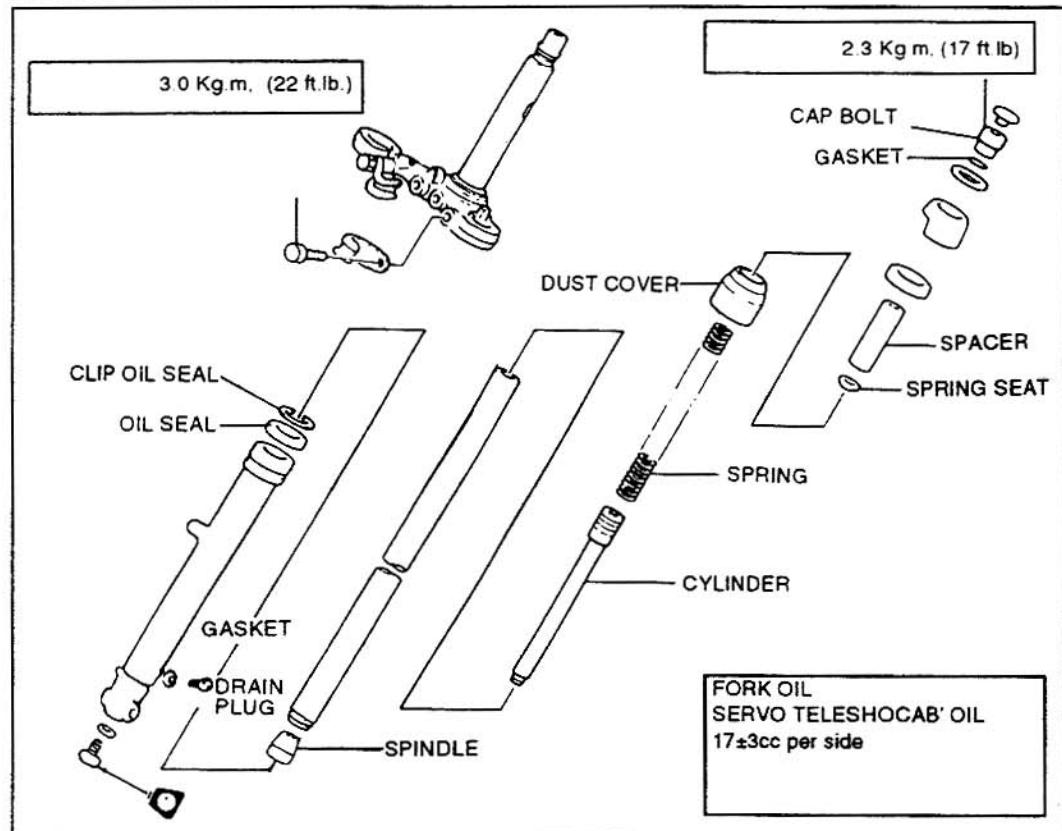
- Lightly grease the wheel oil seal lips and gear teeth of the speedometer drive and driven gears.
(use lightweight, lithium base grease.)
- Be sure that the torque stopper is positioned correctly.
- Install the chain clip with rounded end facing the direction of travel.

Front Axle Nut 4.3Kg. m (31ftlb.)
Rear Axle Nut 9.2Kg. m (66ftlb.)



FRONT FORK

FRONT FORK

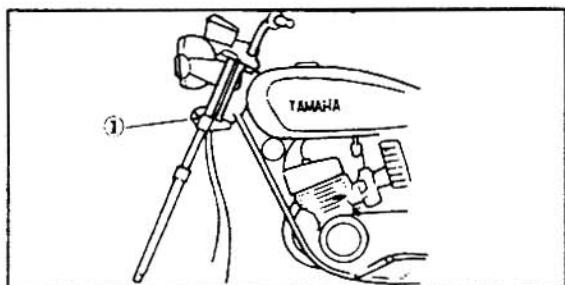
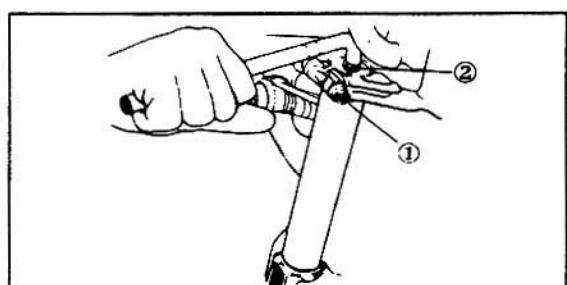


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REMOVAL

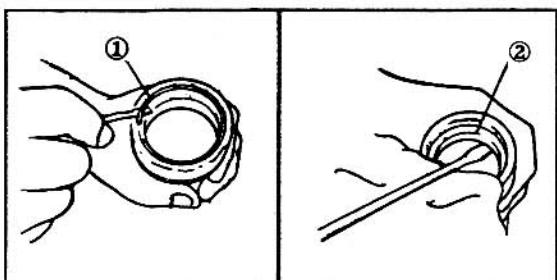
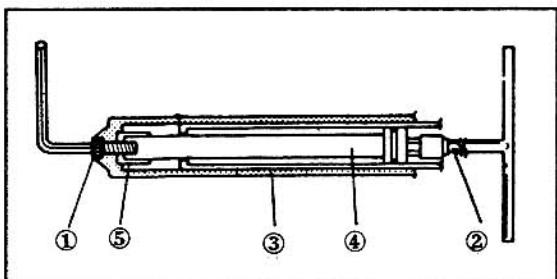
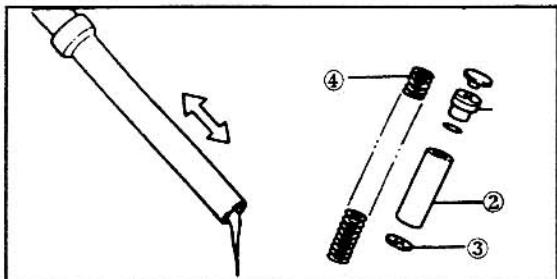
1. Remove:
 - Front wheel
 - Front fender
2. Loosen:
 - Front fork pinch bolt ①
 - Cap bolt ②

Use Top Plug Spanner (ESM-214) 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 Socket head rod securing bolt (1)
 - Use T-handle (2) (ESM-213)
 - Inner tube (3)
 - Cylinder Complete (4)
 - Spindle (5)
4. Remove:
 - Dust cover
 - Clip Oilseal (1)
 - Oil seal (2) with TFF Oil Seal removal tool - ESM 270.

INSPECTION

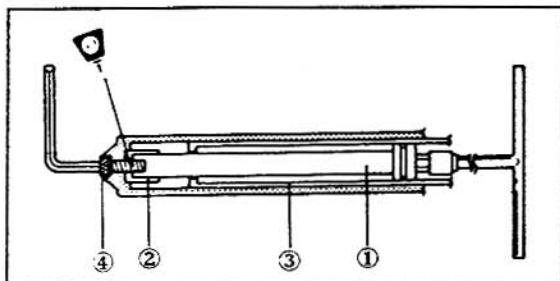
1. Inspect:
 - Inner tube (1)
 - Outer tubeScratches/Bends/Damage → Replace.
2. • Measure
 - Fork spring (2)Out of specification → Replace



Fork Spring Free Length:
296.5 mm
Limit 291.5 mm



FRONT FORK



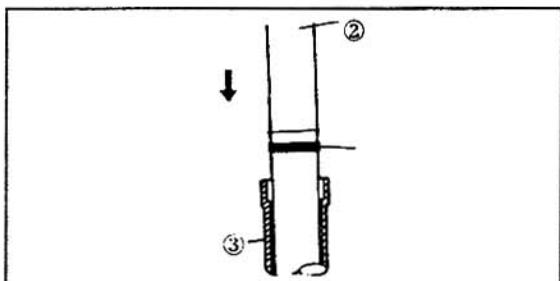
ASSEMBLY

1. Install:

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

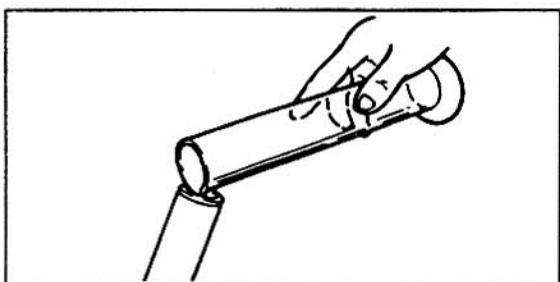


Cylinder Comp.
2.3 Kg.m, (17 ft.lb)



2. Install:

- Oil seal ① with TFF Oil Seal installing tool - ESM 275.
 - Clip oilseal
 - Dust cover
- ① Inner tube
① Outer Tube



3. Fill:

- Front fork

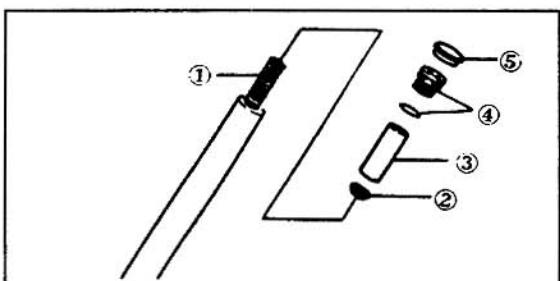


Each Fork:
175 ± 3cc

SERVO TELESHOCAB OIL

- Special Escorts Oil
- Special Yamaha Oil

5



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.

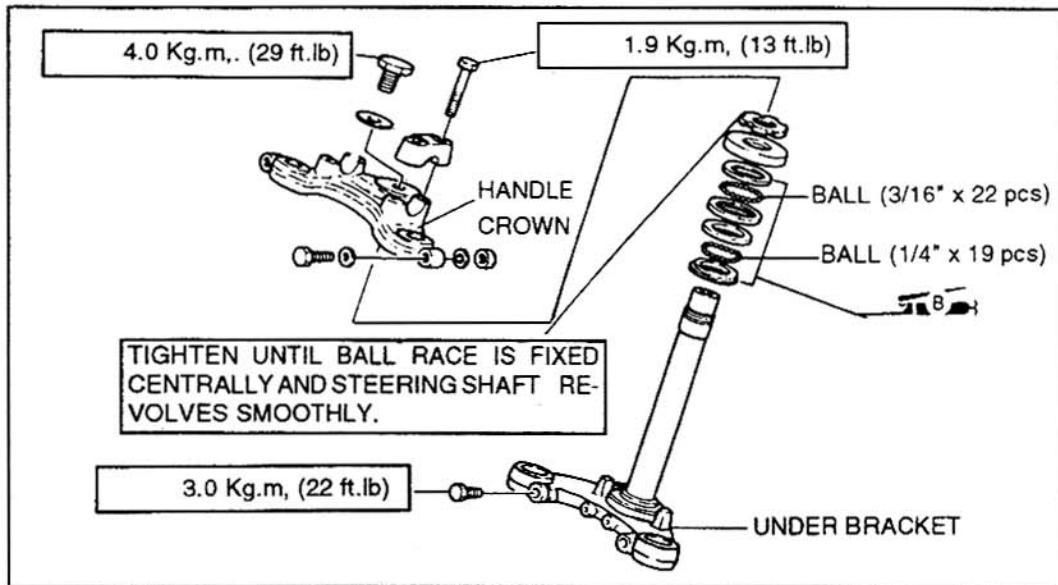


Cap Bolt:
2.3 Kg.m, (17 ft.lb)

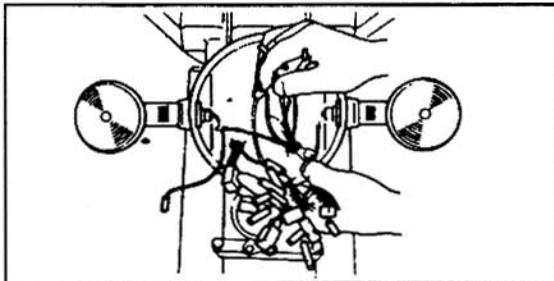


STEERING HEAD

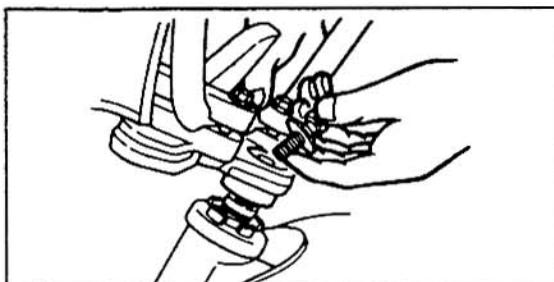
STEERING HEAD



REMOVAL

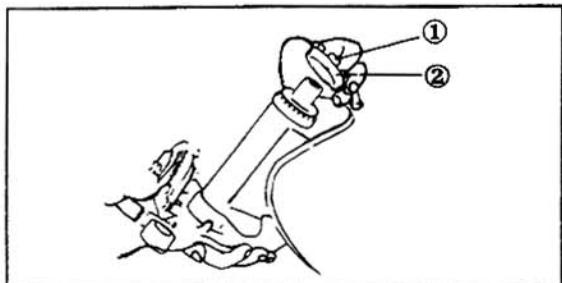


1. Remove:
 - Front wheel
 - Front forks
2. Disconnect:
 - Brake cable
 - Clutch cable
3. Disconnect:
 - Electrical lead wires (in the headlight case)
4. Remove:
 - Headlight
5. Remove:
 - Steering fitting bolt
 - Handle crown assembly
 - Headlight stays (together with headlight case)





STEERING HEAD

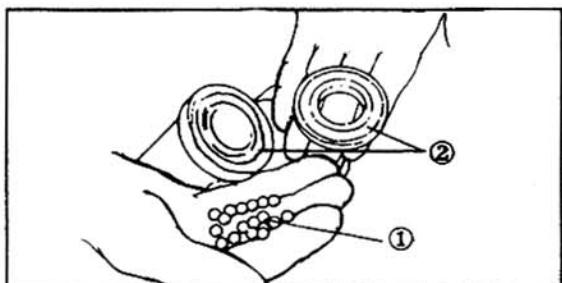


1. Remove:
 - Forkstem nut ①
 - Bearing cover ②



IMPORTANT

Support the under bracket not to lose any bearings.



- Under bracket
- Bearings

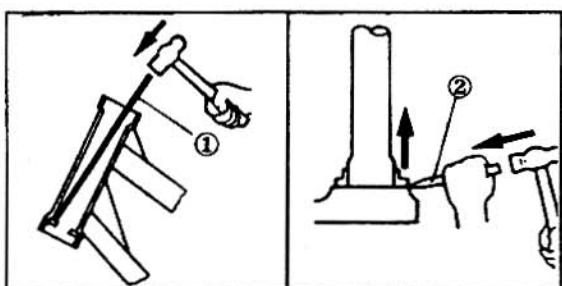
INSPECTION

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



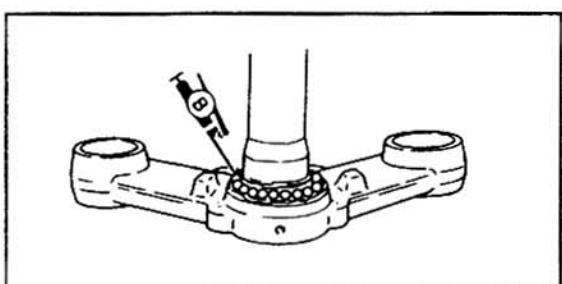
IMPORTANT

Always replace bearing and race as a set.



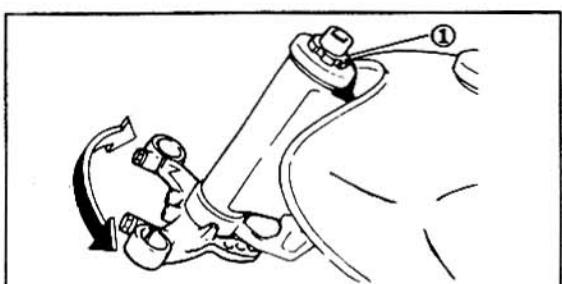
3. When replacing the bearing, use a long rod ① and cold chisel ② to remove the race.

5



Installation

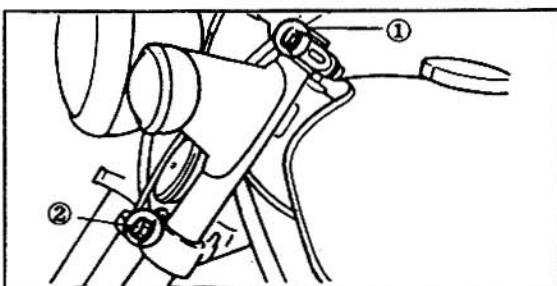
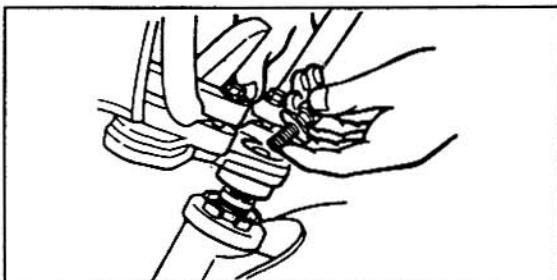
1. Grease the bearings and races.



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



STEERING HEAD



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



Fitting Bolt:
4.0 Kg.m, (29 ft.lb)

5. Tighten:
 - Inner tube Pinch bolts①

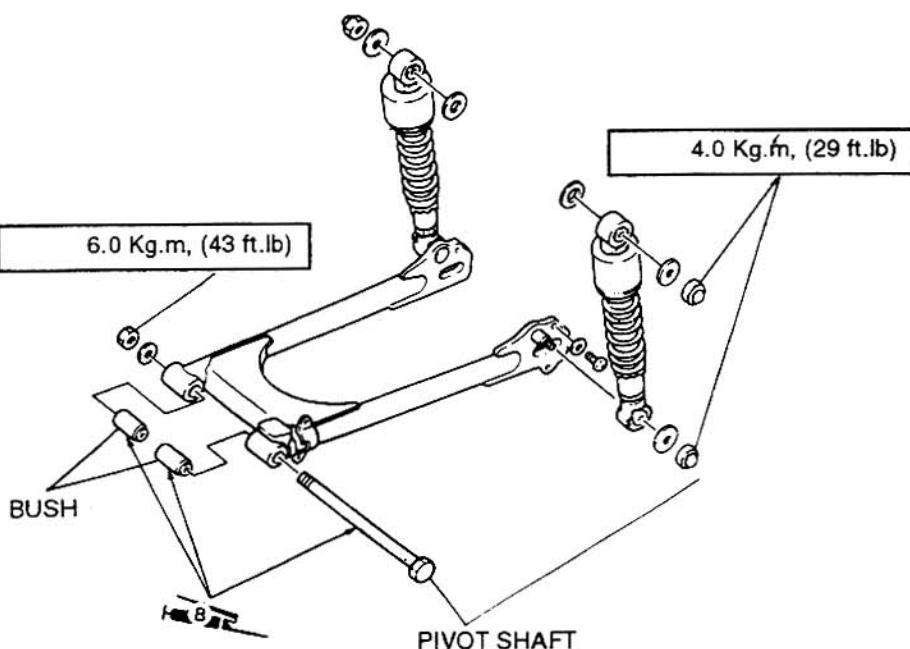


Inner Tube Pinch Bolt:
Upper : 1.5 Kg.m, (11 ft.lb)
Lower : 3.0 Kg.m, (22 ft.lb)

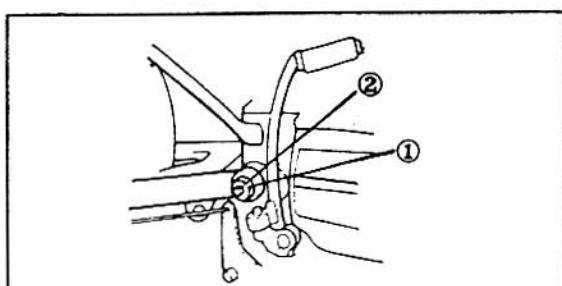
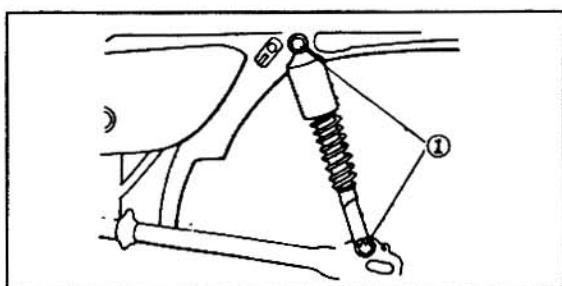


REAR SHOCK ABSORBER AND SWINGARM

REAR SHOCK ABSORBER AND SWINGARM



5



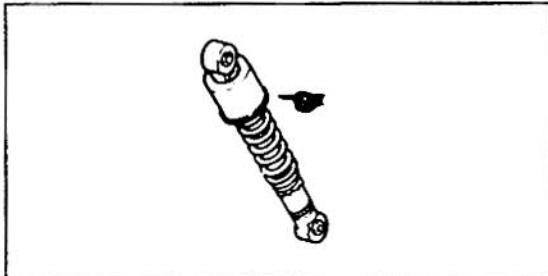
REMOVAL

1. Remove:
 - Rear wheel
 - Chain case
 - Driven sprocket
 - Drive chain
 - Chain case
2. Remove:
 - Shock absorber mount bolts①
 - Shock absorbers
1. Remove:
 - Pivot shaft nut①
 - Pivot shaft②
 - Swingarm



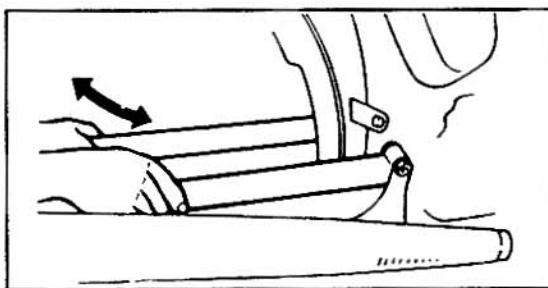
REAR SHOCK ABSORBER AND SWINGARM

INSPECTION



1. Inspect:

- Shock absorber
Oil leaks/Damage → Replace

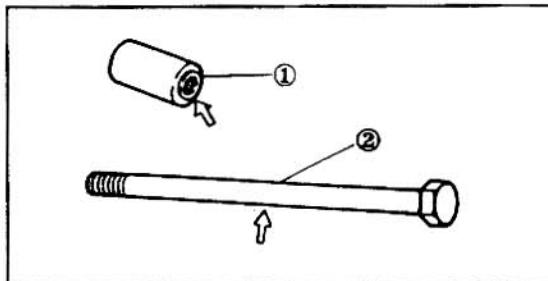


2. Inspect:

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

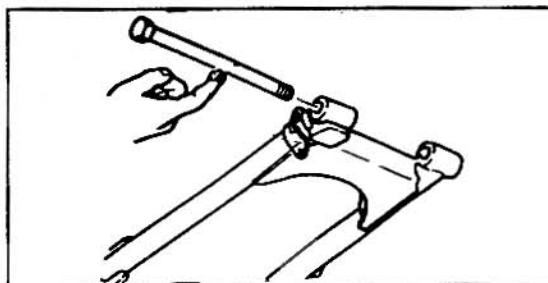


**Swingarm Free Play Limit:
2.0 mm**



3. Inspect:

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



INSTALLATION

1. Grease the bushes and pivot shaft.

2. Install:

- Swingarm
- Pivot shaft



6.0 Kg.m, (43 ft.lb)



CAUTION

Always adjust both the right and left shock absorbers to the same position



CHAPTER 6 **ELECTRICALS**

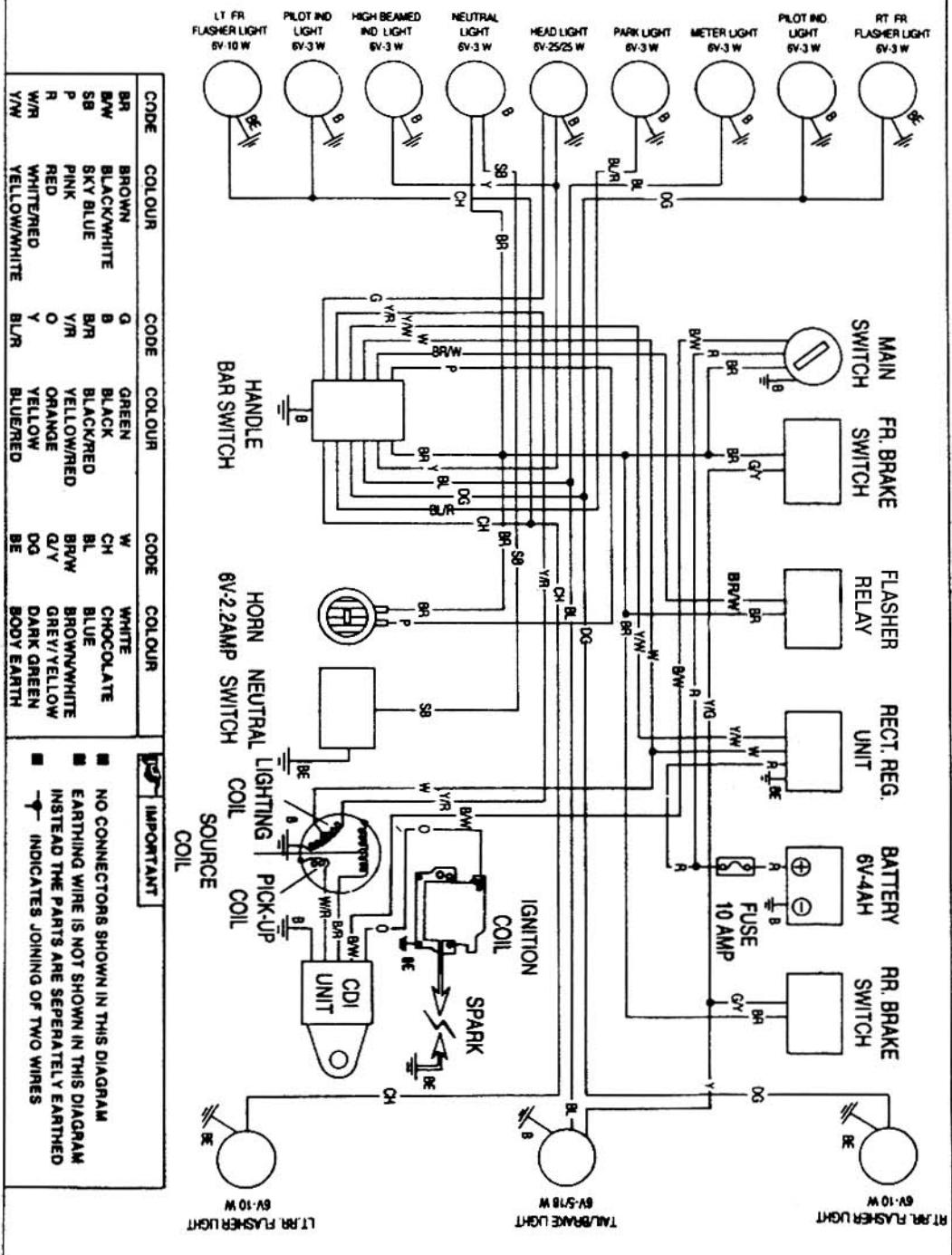
CIRCUIT DIAGRAM	6-1
IGNITION SYSTEM	6-2
CHARGING SYSTEM	6-4
LIGHTING SYSTEM	6-5
SIGNAL SYSTEM	6-6
CABLE ROUTING	6-8

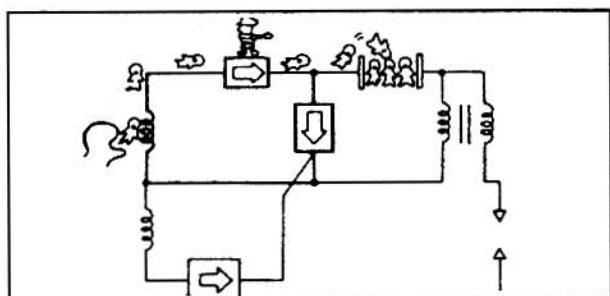
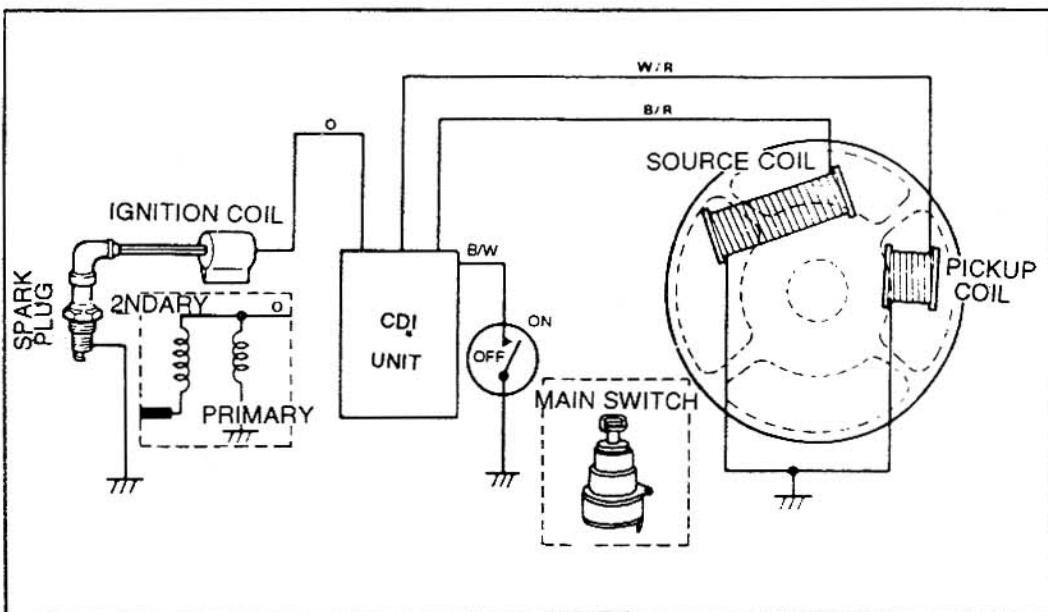


ELEC

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

IX. ELECTRICAL WIRING DIAGRAM (LAYOUT)

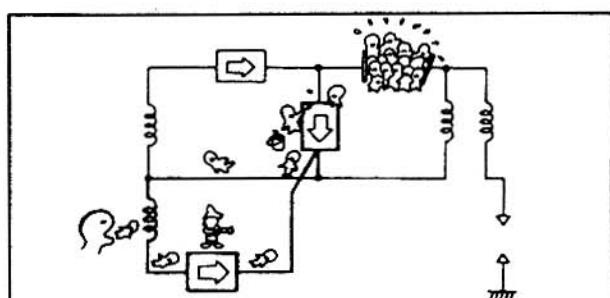




FUNCTION

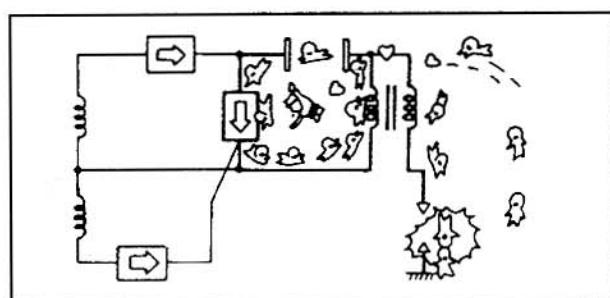
Function No.1

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.



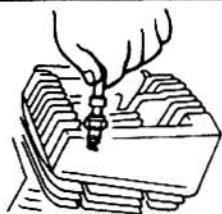
Function No.3

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 Gap Test

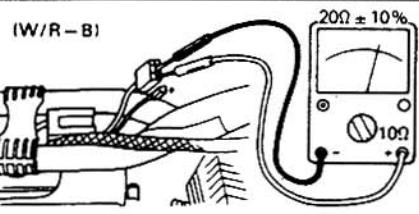


Ground the spark plug to the cylinder head and Kick the starter.

No Spark
or
Weak Spark



4 Source Coil Check



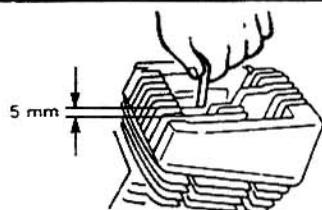
Check the pickup coil resistance

Ok

NG



2 Spark Gap Test



Hold the ignition lead 5 mm from the cylinder head

No spark



Spark

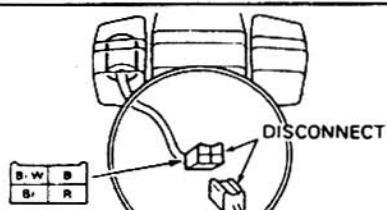
Check the plug cap
and spark plug

Ok

NG

Replace the source coil

3 Spark Gap Test



Disconnect the main switch coupler and kick the starter.

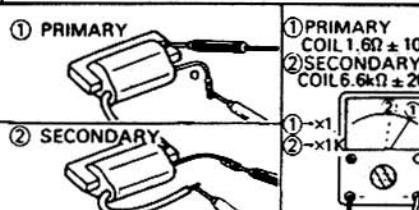
No spark



spark

Check main switch

6 Source Coil Check



Check the resistance of the primary and secondary coil winding.

Ok

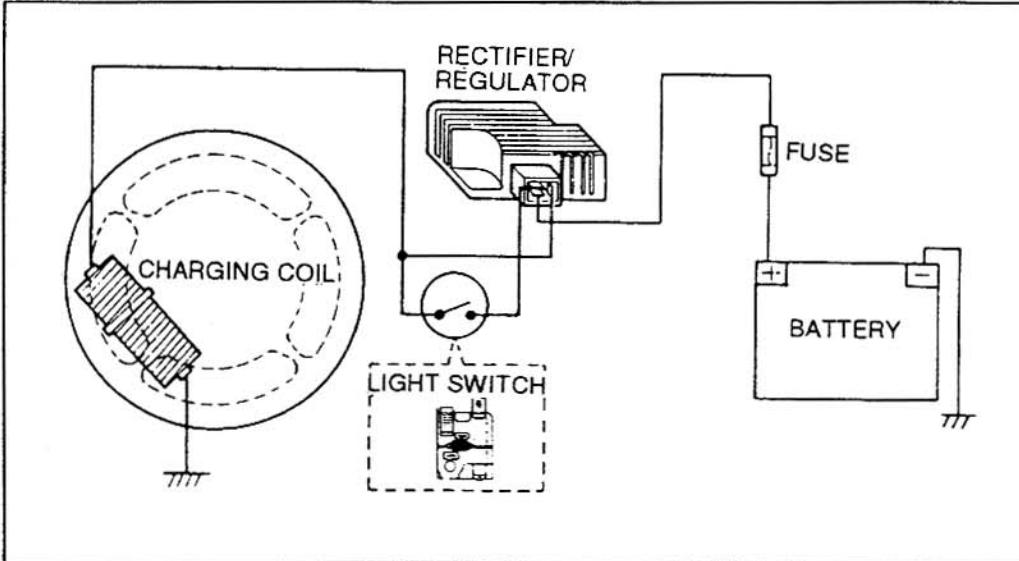
NG

Replace the CDI unit

Replace the ignition coil



CHARGING SYSTEM

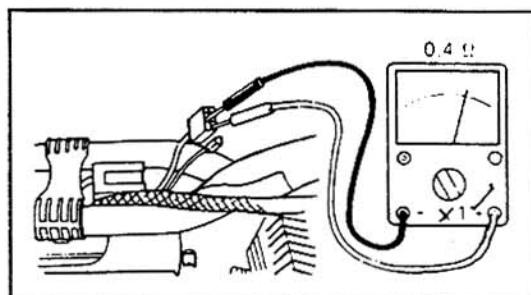
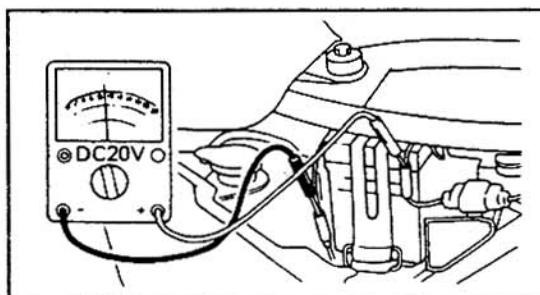


1. Charging Voltage Test

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

2. Charging Coil Resistance

Disconnect the generator leads and check charging coil winding resistance.



Charging Voltage: (Day)

7.5-8.0v at 5,000 r/min



Charging Coil Resistance:

0.4± 10%

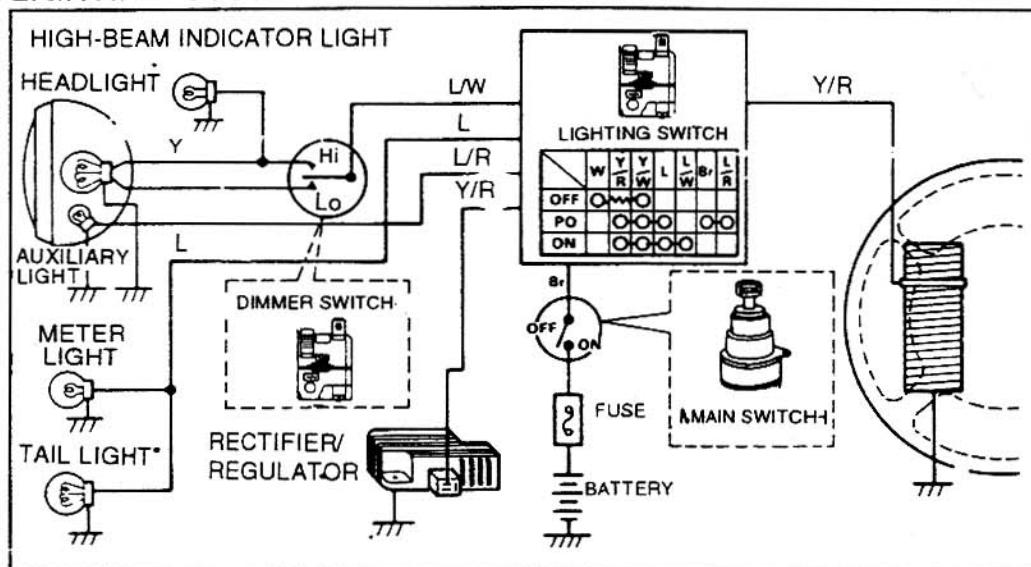
(White—Black)

6

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

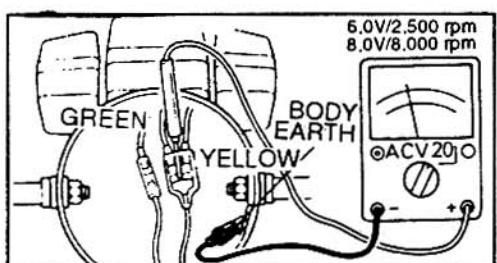
If out of specification, replace charging coil.

LIGHTING SYSTEM

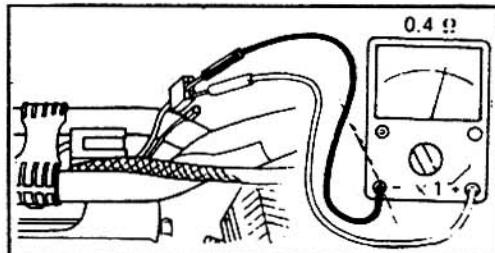


1. Lighting Voltage Test

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



2. Lighting Coil Resistance



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

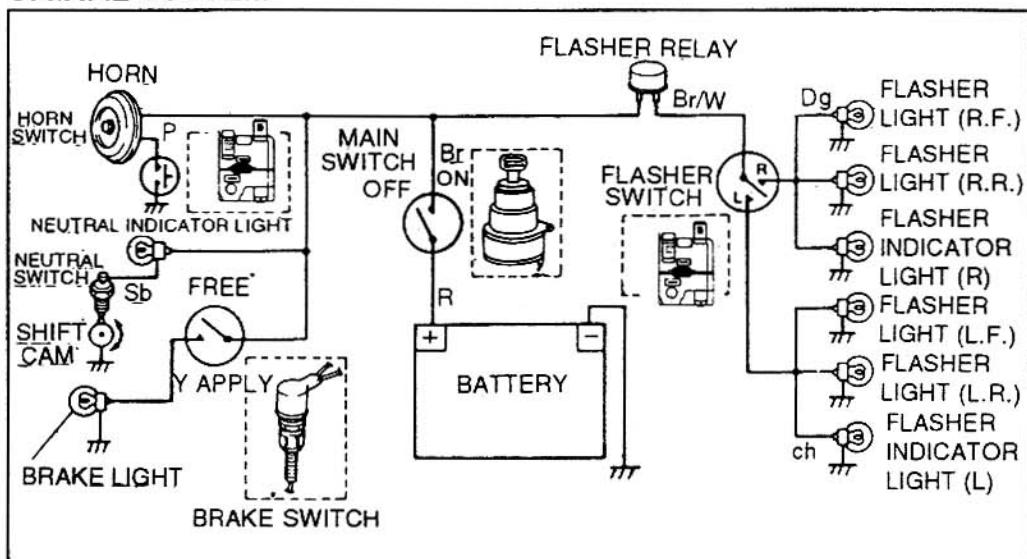


Lighting Voltage
(Yellow-Ground) or (Green-Ground)
6.0V or more at 2,500 r/min
8.0V or less at 8,000 r/min

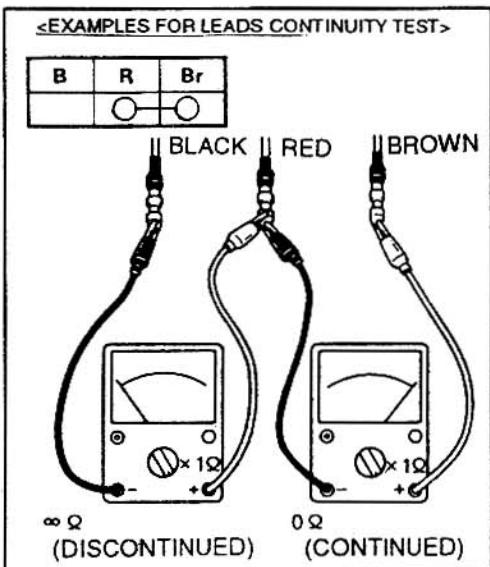
If out of specification, check lighting coil resistance and Rectifier/Regulator.



SIGNAL SYSTEM

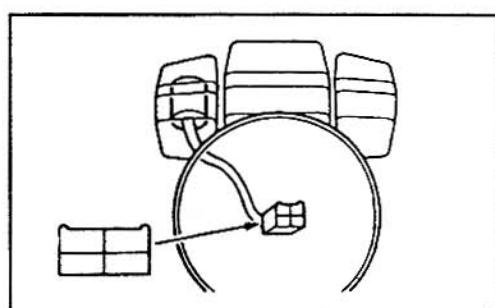


SWITCH INSPECTION



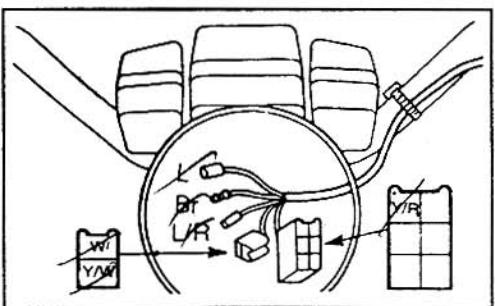
Main switch

	B	B/W	R	Br
OFF	○	○	○	
ON	○		○	○



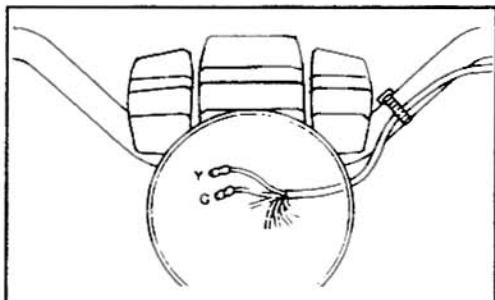
Light switch

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



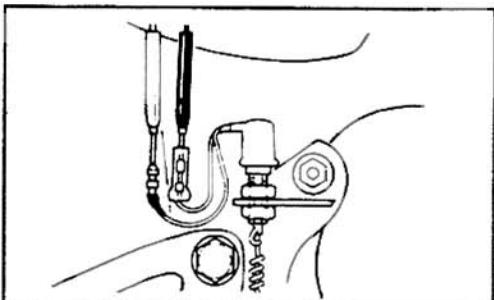
Dimmer switch

		G	L/W	Y
Hi	D			○—○
Lo	D	○	○	



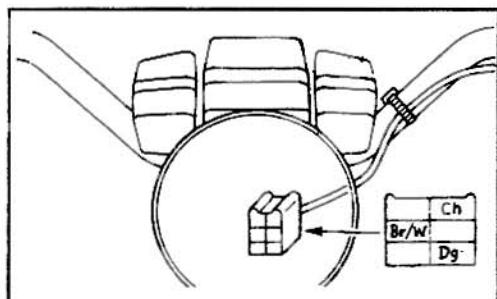
Brake switch

			
	○		○



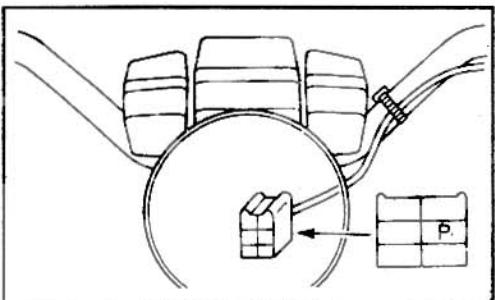
Flasher switch

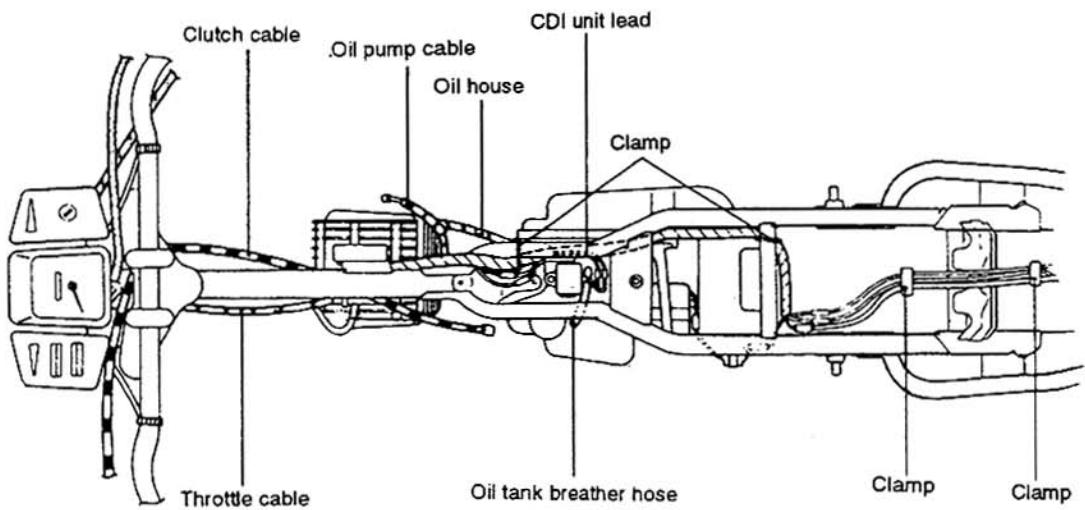
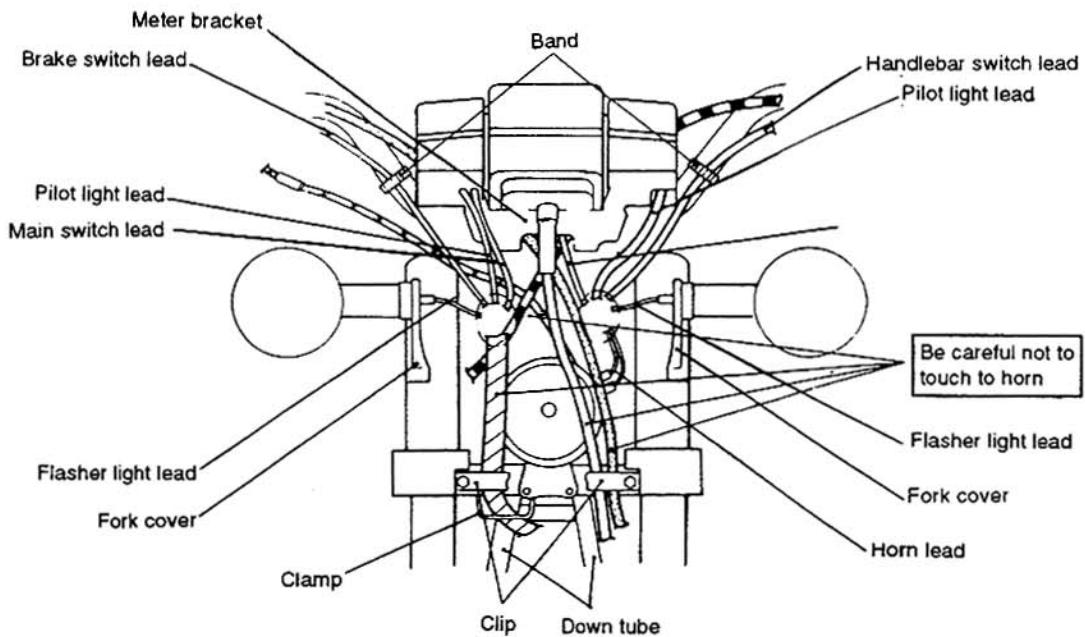
		ch	Br/w	Dg
R	►		○	○
N	•			
L	◀	○	○	



Horn switch

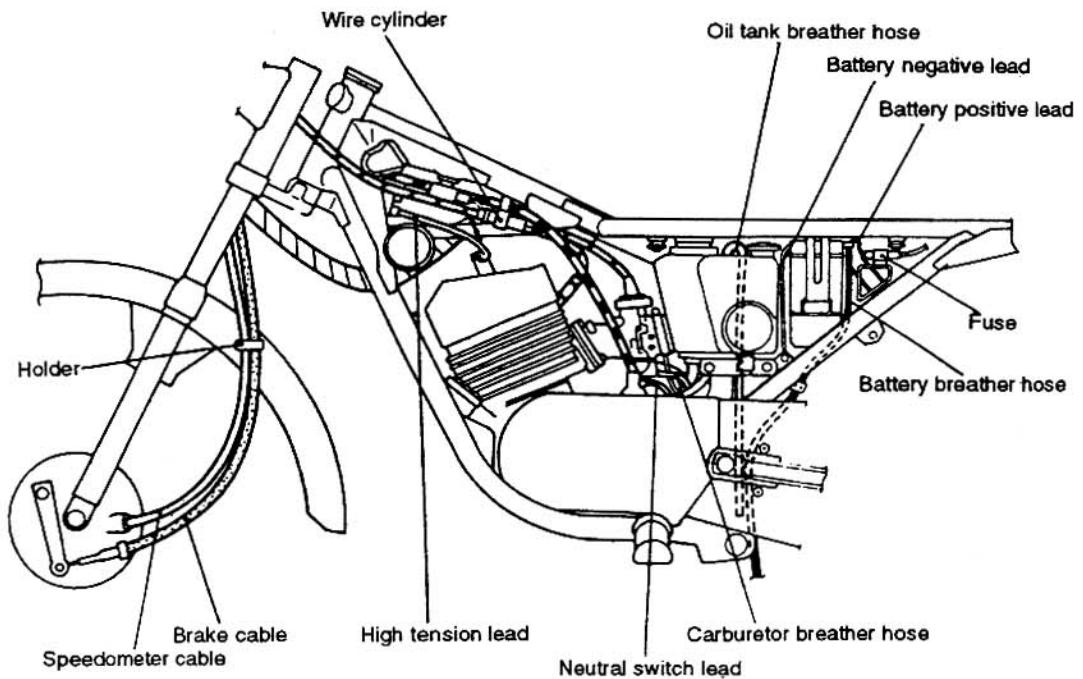
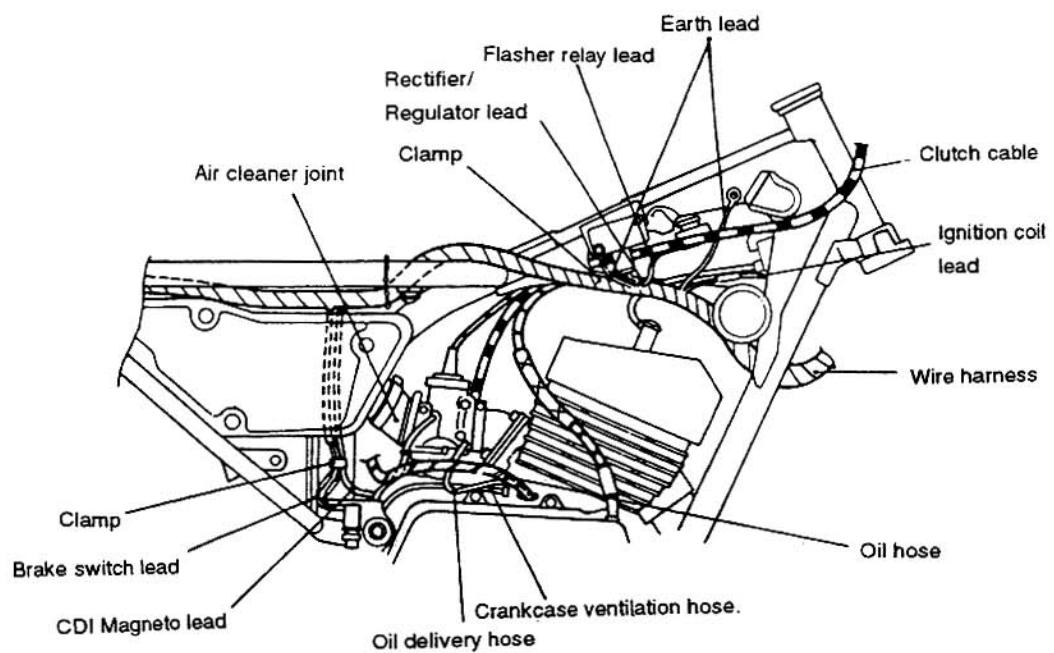
		P		///
■				
□		○		○







CABLE ROUTING





SPECIAL NOTES

- **Use bulbs of exact wattage rating, otherwise it may result in electrical overloading or premature bulb failures.**
- **Avoid driving the motorcycle without charged battery in circuit. Keep head light 'ON' if at all motorcycle has to be driven without battery.**
- **Get your battery checked and recharged after every 3000 Kms. of running as per the periodic maintenance schedule. Replace it, if necessary.**



TRSH

CHAPTER 7 TROUBLE SHOOTING

TROUBLE SHOOTING CHART 7-1



TRSH

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

TROUBLE SHOOTING CHART



TRSH

POSSIBLE CAUSES	REMEDIES
A STARTING TROUBLE <p>1. FUEL SYSTEM</p> <ul style="list-style-type: none"> • No fuel in tank • Fuel cock closed • Improper fuel supply due to sediment or water in fuel or air lock in fuel line. • Air vent hole in fuel tank cap clogged • Choked fuel cock. • Carburettor flooded. • Choked fuel filter. <p>2. IGNITION</p> <ul style="list-style-type: none"> • Main switch 'OFF' • Spark plug dirty or bridged by soot or oil. • H.T. lead loose/broken. • Insulation of spark plug cracked • Electronic ignition system defective. 	<ul style="list-style-type: none"> • Refill fuel in tank • Turn fuel cock to 'ON' position • Get fuel tank, fuel cock, fuel line and carburettor cleaned at COMPANY AUTHORISED DEALERSHIP • Clean. • Get fuel cock cleaned at COMPANY AUTHORISED DEALERSHIP • Turn fuel cock to 'OFF' position. Open the throttle and endeavour to kick start after unscrewing spark plug and plugging the spark plug hole with a clean cloth. Refit spark plug and kick start the engine. • Get fuel filter cleaned at COMPANY AUTHORISED DEALERSHIP • Turn key to 'ON' Position • Clean, check and adjust the spark plug electrode gap • Fit properly/replace H.T. Lead. • Replace spark plug. or shorting. • Check for loose connections / contact COMPANY AUTHORISED DEALERSHIP
B POOR PICK-UP <ul style="list-style-type: none"> • Muffler outlet choked. • Air filter choked or dirty. • Improper carburettor adjustment. • Cylinder head loose. • Clutch slipping. • Inferior quality of fuel. • Brake(s) binding. • Piston ring worn out. 	<ul style="list-style-type: none"> • Clean the muffler. • Clean air filter/replace. • Contact COMPANY AUTHORISED DEALERSHIP • Tighten cylinder head nuts with specified torque. • Contact COMPANY AUTHORISED DEALERSHIP • Check and replace with specified good quality fuel. • Adjust brake(s). • Contact COMPANY AUTHORISED DEALERSHIP



POSSIBLE CAUSES	REMEDIES
C ENGINE GETS OVER HEATED <ul style="list-style-type: none">• Fuel-air mixture lean• Air filter choked or dirty• Muffler outlet choked• Carbon deposit in the Engine• Spark plug of incorrect heat range.	<ul style="list-style-type: none">• Contact COMPANY AUTHORISED DEALERSHIP• Clean/replace air filter.• Clean the muffler.• Contact COMPANY AUTHORISED DEALERSHIP• Replace with spark plug of correct heat range
D POOR BRAKING <ul style="list-style-type: none">• Brake(s) not properly adjusted.• Linings of brake shoe worn out.• Brake drum wornout or scored.• Brake noisy.	<ul style="list-style-type: none">• Adjust brake(s) properly.• Replace brake shoe(s).• Replace brake drum.• Grind brake shoe surface properly.
E MOTORCYCLE WOBBLING <ul style="list-style-type: none">• Rim run-out or wobble.• Loose/broken spoke(s).• Incorrect fitment of tyre(s).• Worn out wheel bearing(s).• Rear arm bush(es) worn out.• Rear arm bent.• Tyre pressure too low. pressure.	<ul style="list-style-type: none">• Retrue wheel rim.• Tighten/replace spoke(s).• Refit tyre properly.• Replace wheel bearing(s)• Replace bush(es).• Contact COMPANY AUTHORISED DEALERSHIP• Inflate tyre(s) to proper
F KNOCKING IN THE FRAME HEAD <ul style="list-style-type: none">• Ball races loose/pitted.	<ul style="list-style-type: none">• Contact COMPANY AUTHORISED DEALERSHIP
G DRIVE CHAIN NOISE <ul style="list-style-type: none">• Chain loose.	<ul style="list-style-type: none">• Get the chain tightened, slack adjusted at COMPANY AUTHORISED DEALERSHIP

TROUBLE SHOOTING CHART



TRSH

POSSIBLE CAUSES	REMEDIES
<p>H ELECTRICALS</p> <p>1. BULBS DO NOT GLOW</p> <ul style="list-style-type: none"> • No fuse in the circuit or defective fuse. • Battery discharged. • Handle bar switch defective • Bulb(s) fused. • Improper earthing. • Loose or improper connections. 	<ul style="list-style-type: none"> • Replace/assemble fuse assy. • Check electrolyte level and replenish with distilled water. Check battery leads for proper contact. Check rectifier/regulator unit. • Repair/replace handle bar switch. • Replace bulb(s). • Make proper earthing. • Make proper connections. <p>COMPANY AUTHORISED DEALERSHIP</p>
<p>2. HORN DOES NOT BLOW</p> <ul style="list-style-type: none"> • Battery discharged. • Horn defective. • Horn switch defective. 	<ul style="list-style-type: none"> • Check electrolyte level and replenish with distilled water. Check battery leads for proper contact and rectifier/regulator unit. • Replace horn. • Contact <p>COMPANY AUTHORISED DEALERSHIP</p>
<p>3. INDICATORS NOT WORKING</p> <ul style="list-style-type: none"> • Fused bulb(s). • Improper connections. • Indicator switch defective. • Flasher unit defective. • Improper earthing 	<ul style="list-style-type: none"> • Replace bulb(s). • Make proper connections. • Contact <p>COMPANY AUTHORISED DEALERSHIP</p> <ul style="list-style-type: none"> • Contact <p>COMPANY AUTHORISED DEALERSHIP</p> <ul style="list-style-type: none"> • Make proper earthing.
<p>4. BRAKE LIGHT NOT WORKING</p> <ul style="list-style-type: none"> • Improper adjustment of rear brake light switch. • Sticky front brake light switch. • Fused bulb. 	<ul style="list-style-type: none"> • Adjust properly. • Contact <p>COMPANY AUTHORISED DEALERSHIP</p> <ul style="list-style-type: none"> • Replace bulb.



SPECIAL NOTES

- **Do not overfill the fuel tank.**
- **Avoid spilling fuel on the hot Engine.**
- **Never re-fill the fuel tank near an open flame.**
- **Throttle should not be opened when using Starter lever (Choke).**
- **Always return the fuel cock lever to 'OFF' position when Engine is not running.**
- **Leaving the fuel cock in the 'ON' or 'RES' position may cause the carburettor to overflow and fuel to run into the Engine. It is possible that it may cause severe mechanical damage when the Engine is started.**



CHAPTER 8 SERVICE INFORMATION

SPECIFICATION 8-1



SERV
INFO

**ALWAYS DEMAND ONLY
GENUINE SPARE PART(S)
TO ENSURE SAFE, LONG
AND TROUBLE - FREE
PERFORMANCE OF THE
MOTORCYCLE.**

SPECIFICATION**SERV
INFO****GENERAL SPECIFICATION**

MODEL	RX-100
Model Code Number	1L1
Frame Serial Number	YY M 1L1000001
Engine Serial Number	YY M 1L1000001
ENGINE	
Engine Type	Air Cooled, 2 Stroke, Gasoline, 7 Port Torque Induction
Displacement	98 cc
Bore x Stroke	50 mm x 50 mm
Compression Ration	6.7:1
Maximum Power	11.0 BHP @ 7500RPM
Maximum Torque	1.07 Kg.m. @ 7000 RPM
LUBRICATION	
Engine Oil	• Servo 2T Supreme-M/s IOC. • Castrol SuperT T
Transmission Oil	• Multigrade 20W/40- M/s IOC. • CRB 20W/40 - M/s Castrol
FUEL	
Type	Regular Gasoline (87 Octane)
Tank Capacity	10.5L (Including Reserve) Reserve Capacity - 1.5L (Approx)
CARBURETTOR	Side Draft, Horizontally Mounted Venturi Diameter-20 mm
SPARK PLUG	
Type	• Mico Super W5 BC
Gap	• BP7 HS (NGK)- Japan • 0.6-0.7 mm
STARTING	Kick Starter
LUBRICATION SYSTEM	Separate Lubrication (Yamaha Autolube Patent)



DIMENSIONAL	
Overall Length	2040 mm
Overall Width	740 mm
Overall Height	1050 mm
Seat Height	765 mm
Wheel Base	1240 mm
Minimum Ground Clearance	145 mm
Minimum Turning Radius	2100 mm
WEIGHT	
Dry	99 Kgs.
CLUTCH	
Type	Wet Multiple Disc
Clutch Plate	4 Nos
Lining of Friction Plate	Rubberised Cork Working in Oil
TRANSMISSION	
Primary Reduction System	HELICAL GEAR
Primary Reduction Ratio	74/19 (3.895)
Secondary Reduction Systm	CHAIN DRIVE
Secondary Reduction Ratio	39/15 (2.600)
Transmission Type	CONSTANT MESH, 4-SPEED
Operation	Through Foot Operated Lever, Mounted on LH Side of Gear Box with Neutral Gear Position Between First Speed and Second Speed
Gear Ratio	
1st	(35/11) 3.182:1
2nd	(30/15) 2.000:1
3rd	(26/19) 1.368:1
4th	(23/23) 1.000:1
CHASSIS	
Type	Double Cradle
Construction	Duplex, Made of Tubular Section
Castor Angle	27.5°
Trail	90 mm



TYRE Size (Front) Size (Rear)	2.50x18-4PR-Nylon-Ribbed 2.75x18-6PR-Nylon-Universal
TYRE PRESSURE Front (Solo/Double) Rear - Solo - Double	22 PSI 28 PSI 32 PSI
Brake Front Brake Type Operation Rear Brake Type Operation	Drum Brake (130 Ø), Internally Expanding Right Hand Operation Drum Brake (130 Ø), Internally Expanding Right Foot Operation
SUSPENSION Front Suspension Rear Suspension	Ceriani Type, Telescopic Fork, Oil Damped Swing Arm (Adjustable 5 Positions), Coil Spring, Oil Damped
WHEEL TRAVEL Front Wheel Travel Rear Wheel Travel	110 mm 75 mm
ELECTRICAL Ignition System Generator System	CDI - Magneto Flywheel Magneto



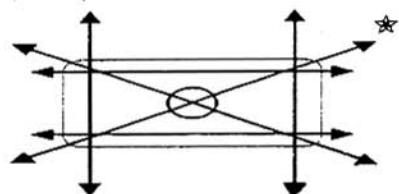
ITEM	SYSTEM	6 VOLT
Head Light		6V- 25W/25W
Tail/Brake Light		6V- 5W/18W
Flasher Light(x4)		6V- 10W(x4)
Park Light		6V- 3W
Neutral Indicator		6V- 3W
High beam Indicator		6V- 3W
Turn Indicators (x 2)		6V- 3W(x2)
Meter Light		6V- 3W
Horn		6V- 3Amp
BATTERY		
Rating		6V-4 AH
Charging Current		0.4 Amp
Charging Time		10 Hrs
Specific Gravity		1.24-1.26 @ 30°C

RESISTANCE SPECIFICATIONS

	SRF - ND	NORMAL
PICK UP COIL RESISTANCE	$18 \Omega \pm 20\%$ at $20 \pm 5^\circ\text{C}$	$20 \Omega \pm 10\%$ at $20 \pm 5^\circ\text{C}$
SOURCE COIL RESISTANCE	$108 \Omega \pm 20\%$ at $20 \pm 5^\circ\text{C}$	$220 \pm 10\%$ at $20 \pm 5^\circ\text{C}$
IGNITION COIL RESISTANCE PRIMARY COIL	$0.23 \Omega \pm 15\%$ at $20 \pm 5^\circ\text{C}$	$1.6 \Omega \pm 10\%$ at $20 \pm 5^\circ\text{C}$
LIGHTING COIL RESISTANCE	$0.3 \Omega \pm 20\%$ at $20 \pm 5^\circ\text{C}$	$0.3 \Omega \pm 20\%$ at $20 \pm 5^\circ\text{C}$
CHARGING COIL RESISTANCE	$0.4 \Omega \pm 20\%$ at $20 \pm 5^\circ\text{C}$	$0.4 \Omega \pm 10\%$ at $20 \pm 5^\circ\text{C}$



MAINTENANCE SPECIFICATIONS

Cylinder Head
(Warp Limit)

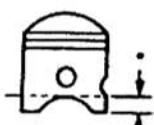
<0.03 mm
★Lines Indicate Straight Edge
Measurement

Cylinder
Bore Size
Taper Limit
Out of Round Limit

50.000 ~ 50.020 mm in 6 Grades
<0.05 mm
<0.01 mm

PISTON
Piston Clearance

30-38 Microns (0.030 mm - 0.038 mm)



Piston	Cylinder
A	A
B	B
C	C
D	D
E	E
F	F

Size (Standard)

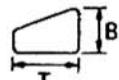
49.966~49.986 in (6 Grades)

Size (Oversize)

First Oversize 50.25 mm
Second Oversize 50.50 mm
Third Oversize 50.75 mm
Fourth Oversize 51.00 mm

**PISTON RINGS**
Sectional Sketch

Top Ring



2nd Ring

Key Stone

B=1.2 mm

T=2.0 mm

Key Stone

B=1.2 mm

T=2.0 mm

End Gap

Top Ring

0.15-0.35 mm

2nd Ring

0.15-0.35 mm

Service Limit

0.60 mm

Side Clearance

Top Ring

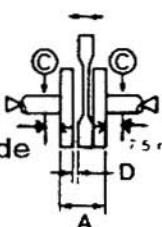
0.03-0.05 mm

2nd Ring

0.03-0.05 mm

CRANK SHAFT

Crank Width 'A'

 $55.9^{+0.05} \text{ mm}$

Runout Limit 'C'

<0.03 mm

Con. Rod Big End side

0.20~0.70 mm

Clearance 'D'

<2.0 mm

Small end Free Play

Limit 'F'

SPECIFICATION**SERV
INFO**

CLUTCH Friction Plate Thickness/Quantity Service Limit Clutch Plate Thickness/Quantity Service Limit (Warp) Clutch Spring Free Length/ Quantity Clutch Spring Minimum Length Clutch Release Method Push Rod Bending Limit	3.0 mm x 5 <2.7 mm 1.2 mm x 4 <0.05 mm 34.5 mm x 4 <33.0 mm Inner Push, Screw Push <0.15 mm
TRANSMISSION Main Axle Deflection Limit (Run Out) Drive Axle Deflection Limit (Run Out)	0.1 mm 0.1 mm
SHIFTER Shifting Type Guide Bar Bending Limit	Guide Bar <0.05 mm
KICK STARTER Type Kick Clip Friction Force (Min-Max)	Kick and Mesh Type P=1.0 Kg. (0.8-1.2 Kg)
Air Filter Element Oil Grade	Servo 2T Supreme or Equivalent

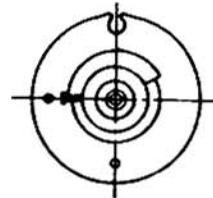


**CARBURETTOR**

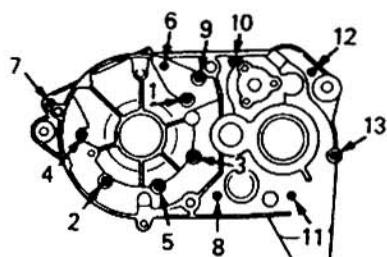
Type	VM20
Manufacturer	• MICKARB (Indian Markets) • MIKUNI (Export & DGS&D)
Main Jet	# 115
Jet Needle-Clip Position	3rd Groove From TOP
Pilot Jet	# 20
Starter jet	# 30
Pilot Air Screw Setting	1.25 ± 0.5 Turns -(Adj. at max. r.p.m. position)
Float Height	22.5 ± 1 mm
Engine Idling Speed	1200 ± 50 rpm

LUBRICATION

System	Separate Lubrication (Yamaha Auto Lube Pump)
Minimum Stroke	0.20-0.25 mm
Maximum Stroke	1.85-2.05 mm
Pulley Adjusting Mark	
At Idle	

**CRANK CASE TIGHTENING****SEQUENCE**

0.7 Kg. m. (5.1 ft.lb.)



SPECIFICATION**SERV
INFO**

CHASSIS	
STEERING SYSTEM	
Steering Bearing Type	Ball Bearing
Number of Balls/Size of Steel Balls	
Upper	22 Nos (3/16")
Lower	19 Nos (1/4")
FRONT SUSPENSION	
Front fork travel	110 mm
Spring Free length	296.5 mm
Spring Minimum Length	291.5 mm
Oil Capacity (New Fill)	175±3cc
Oil Capacity (For Replacement)	158±3cc
Grade	<ul style="list-style-type: none"> • Special Escorts Oil (Indian Markets) • Special Yamaha Oil (Other Markets)
REAR SUSPENSION	
Shock Absorber Travel	70 mm
Rear Arm	
Swingarm Free Play Limit	
End (Skew)	<2.0 mm
Side	< 2.0 mm
WHEEL	
Front Wheel Type	Spoke Wheel
Rear Wheel Type	Spoke Wheel
Front & Rear Rim Size/Material	1.50x18/Steel
Rim Run Out Limit	
Vertical	<2.0
Lateral	<2.0 mm
DRIVE CHAIN	
No. of Links	110
Chain Slack	20-30 mm
DRUM BRAKE	
Type	Internally Expanding, Leading & Trailing
Drum Inside Dia	130 mm
Service Limit	<131 mm
Lining Thickness	5.0 mm
Service Limit	<2.0 mm
BRAKE LEVER & BRAKE PEDAL	
Brake Lever Free Play/	5-8 mm (Indian Market)
At Lever Point	2.5-3.5 mm (Other Market)
Brake Pedal Free Play	20-30 mm
CLUTCH LEVER	
Free Play/At Lever Point	2-3 mm
Free Play At Tappet Rod	1/4 Turn loose (Anti Clock Wise)



TORQUE SPECIFICATION

TIGHTENING TORQUE	THREAD SIZE	QTY.	Lb.ft	Kg.m
ENGINE				
Oil Pump	M5	2	3.6	0.5
Drain Plug	M12	1	14.0	2.0
Cylinder Head	M8	4	18.0	2.5
Cylinder	M10	4	25.0	3.5
Spark Plug	M14	1	14.0	2.0
Intake Manifold	M6	4	5.7	0.8
Primary Drive Gear	M12	1	40.0	5.5
Clutch Boss	M12	1	31.0	4.3
Clutch Spring	M5	4	4.3	0.6
Drive Sprocket	M16	1	40.0	5.5
Neutral Point	M14	1	14.0	2.0
Neutral Switch	M12	1	2.9	0.4
Cam Stopper	M14	1	14.0	2.0
Shift Cam Stopper Lever	M6	1	10.0	1.4
Change Pedal	M6	1	7.0	1.0
Change Shaft Adjuster	M8	1	22.0	3.0
Oil Seal Retainer	M8	1	11.0	1.6
Flywheel Magneto	M12	1	50.0	7.0

TORQUE SPECIFICATION**SERV
INFO**

TIGHTENING TORQUE	THREAD SIZE	QTY.	Lb.ft	Kg.m
CHASSIS				
Front Axle Shaft	M10	1	31.0	4.3
Crown Handle-Inner Tube	M8	2	11.0	1.5
Crown Handle-Steering Shaft	M10	1	29.0	4.0
Handle Crown-Handle Holder	M8	4	13.0	1.9
Under Bracket-Inner Tube	M10	2	22.0	3.0
Pivot Shaft	M12	1	43.0	6.0
Tension Bar	M8	2	13.0	1.9
Sprocket Rear	M8	4	18.0	2.6
Camshaft Lever	M6	2	6.5	0.9
Rear Axle Shaft	M14	1	66.0	9.2
Sprocket Shaft Nut	M20	1	66.0	9.2
Shock Absorber	M10	2	29.0	4.0
Front Engine Mtg. Bolt	M8	1	22.0	3.0
Rear Upper Engine Mtg Bolt	M10	1	43.0	6.0
Rear Lower Engine Mtg. Bolt	M10	1	43.0	6.0
Footrest Frame	M8	4	17.0	2.3
Cap Bolt-Front Fork	M25	2	17.0	2.3

NOTES

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