

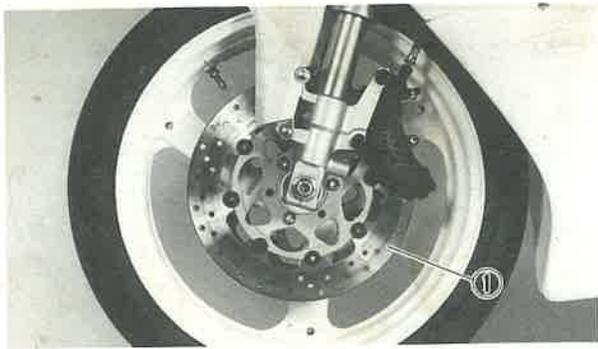


YAMAHA
TZ250D1/[D]

**OWNER'S
SERVICE MANUAL**

LIT-11626-08-21

4DP-28119-10



INFORMATION BEFORE PRE-OPERATION

1. The brake disc ① is coated with a rust-inhibiter.

Before riding the machine, thoroughly remove it using a lacquer thinner.

⚠ WARNING

• **LACQUER THINNER IS HIGHLY FLAMMABLE.**

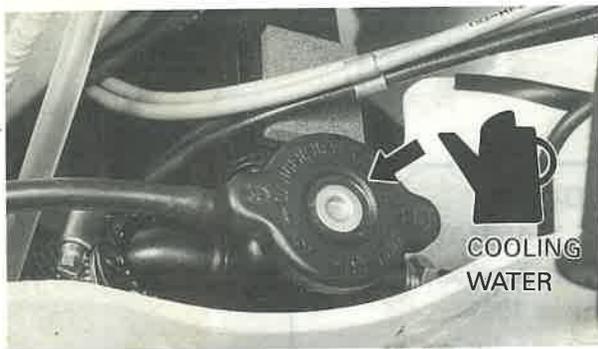
Always turn off the engine while using lacquer thinner. Take care not to spill any lacquer thinner on the engine or exhaust system.

Never use it in the vicinity of an open flame, or while smoking.

• **LACQUER THINNER CAN CAUSE INJURY.** Always use lacquer thinner in a well ventilated area. If you should swallow some lacquer thinner, inhale excess lacquer thinner vapors, or allow any lacquer thinner to get into your eyes, contact a doctor immediately.

NOTE:

- When the machine is not in use for a long time, apply a rust-inhibiter to the brake disc.
- After riding in the rainy weather, wipe the moisture completely off the disc.
- If rust appears on the brake disc, carefully remove it using #400 sand paper.



2. The cooling system is filled with coolant at the factory to prevent rusting. Be sure to replace coolant with soft water before riding.

CAUTION:

Hard water or salt water is harmful to the engine parts. You may use distilled water, if you can't get soft water.

TZ250D1/(D)

OWNER'S SERVICE MANUAL

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P/N LIT-11626-08-21

INTRODUCTION

Congratulations on your purchase of a Yamaha TZ250D1/(D). This model is the culmination of Yamaha's vast experience in the production of pacesetting racing machines. It represents the highest grade of craftsmanship and reliability that have made Yamaha a leader.

This manual explains operation, inspection, basic maintenance and tuning of your machine. If you have any questions about this manual or your machine, please contact your Yamaha dealer.

NOTE: _____

As improvements are made on this model, some data in this manual may become outdated. If you have any questions, please consult your Yamaha dealer.

⚠ WARNING _____

PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING THIS MACHINE. DO NOT ATTEMPT TO OPERATE THIS MACHINE UNTIL YOU HAVE ATTAINED A SATISFACTORY KNOWLEDGE OF ITS CONTROLS AND OPERATING FEATURES AND UNTIL YOU HAVE BEEN TRAINED IN SAFE AND PROPER RIDING TECHNIQUES. REGULAR INSPECTIONS AND CAREFUL MAINTENANCE, ALONG WITH GOOD RIDING SKILLS, WILL ENSURE THAT YOU SAFELY ENJOY THE CAPABILITIES AND THE RELIABILITY OF THIS MACHINE.

WARRANTY INFORMATION

This model is sold AS IS, WITHOUT ANY WARRANTIES EXPRESSED OR IMPLIED REGARDLESS OF THE INTENDED USE.

THE PURCHASER OF THIS MACHINE, which is intended for competition purposes, IS RESPONSIBLE FOR ALL COSTS SERVICE AND/OR REPAIR.

IMPORTANT NOTICE

THIS MACHINE IS DESIGNED STRICTLY FOR COMPETITION USE, ONLY ON A CLOSED COURSE. It is illegal for this machine to be operated on any public street, road, or highway. Off-road use on public lands may also be illegal. Please check local regulations before riding.

⚠ SAFETY INFORMATION

- 1. THIS MACHINE IS TO BE OPERATED BY AN EXPERIENCED RIDER ONLY.**
Do not attempt to operate this machine at maximum power until you are totally familiar with its characteristics.
- 2. THIS MACHINE IS DESIGNED TO BE RIDDEN BY THE OPERATOR ONLY.**
Do not carry passengers on this machine.
- 3. ALWAYS WEAR PROTECTIVE APPAREL.**
When operating this machine, always wear an approved helmet with goggles or a face shield. Also wear heavy boots, gloves, and protective clothing. Always wear proper fitting clothing that will not be caught in any of the moving parts or controls of the machine.
- 4. ALWAYS MAINTAIN YOUR MACHINE IN PROPER WORKING ORDER.**
For safety and reliability, the machine must be properly maintained.
Always perform the pre-operation checks indicated in this manual.
Correcting a mechanical problem before you ride may prevent an accident.
- 5. GASOLINE IS HIGHLY FLAMMABLE.**
Always turn off the engine while refueling. Take care to not spill any gasoline on the engine or exhaust system. Never refuel in the vicinity of an open flame, or while smoking.

6. GASOLINE CAN CAUSE INJURY.

If you should swallow some gasoline, inhale excess gasoline vapors, or allow any gasoline to get into your eyes, contact a doctor immediately. If any gasoline spills onto your skin or clothing, immediately wash skin areas with soap and water, and change your clothes.

7. ONLY OPERATE THE MACHINE IN AN AREA WITH ADEQUATE VENTILATION.

Never start the engine or let it run for any length of time in an enclosed area. Exhaust fumes are poisonous. These fumes contain carbon monoxide, which by itself is odorless and colorless. Carbon monoxide is a dangerous gas which can cause unconsciousness or can be lethal.

8. PARK THE MACHINE CAREFULLY; TURN OFF THE ENGINE.

Always turn off the engine if you are going to leave the machine. Do not park the machine on a slope or soft ground as it may fall over.

9. PROPERLY SECURE THE MACHINE BEFORE TRANSPORTING IT.

When transporting the machine in another vehicle, always be sure it is properly secured and in an upright position and that the fuel cock is in the "OFF" position. Otherwise, fuel may leak out of the carburetor or fuel tank.

TO THE NEW OWNER

This manual will provide you with a good basic understanding of features, operation, and basic maintenance and inspection items of this machine. Please read this manual carefully and completely before operating your new machine. If you have any questions regarding the operation or maintenance of your machine, please consult your Yamaha dealer.

NOTE: _____

This manual should be considered a permanent part of this machine and should remain with it even if the machine is subsequently sold.

NOTICE

Some data in this manual may become outdated due to improvements made to this model in the future. If there is any question you have regarding this manual or your machine, please consult your Yamaha dealer.

F.I.M MACHINE WEIGHTS:

Weights of machines without fuel

The minimum weights for road race machines are:

for the class 125 ccminimum
70 kg (154 lb)

for the class 250 ccminimum
95 kg (209 lb)

for the class 500 ccminimum
130 kg (287 lb)

In modifying your machine (e.g., for weight reduction), take note of the above limits of weight.

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

WARNING

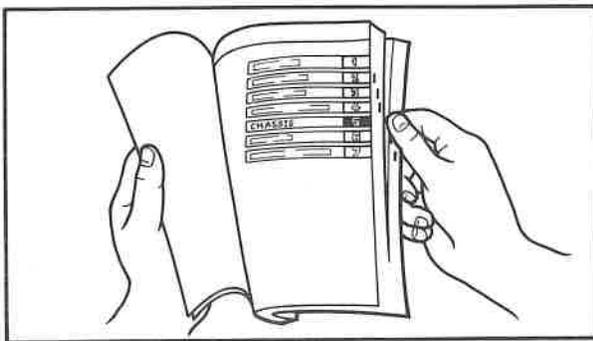
Failure to follow WARNING instructions could result in severe injury or death to the machine operator, a bystander, or a person inspecting or repairing the machine.

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the machine.

NOTE:

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



FINDING THE REQUIRED PAGE

1. This manual consists of seven chapters; "General Information", "Specifications", "Regular inspection and adjustments", "Engine", "Chassis", "Electrical" and "Tuning".
2. The table of contents is at the beginning of the manual. Look over the general layout of the book before finding then required chapter and item.

Bend the book at its edge, as shown, to find the required fore edge symbol mark and go to a page for required item and description.

MANUAL FORMAT

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

•Bearings

Pitting/Damage → Replace.

HOW TO READ DESCRIPTIONS

1. An easy-to-see disassembly illustration is mainly provided for a disassembly job.
2. Numbers are given in the order of a disassembly job in the disassembly illustration.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks. The meanings of the symbol marks are given on the next page.
4. A job instruction chart accompanies the assembly illustration, providing the order of jobs, names of parts, notes in jobs, etc.
5. In addition to the disassembly illustration, "Points for Removal" is provided to supplement in detail the explanation which does or cannot necessarily cover the main jobs.
6. Jobs necessary before and after those which are not included in the disassembly illustration are explained before the same illustration as related jobs.

- | | |
|----------------------------------|---------------------|
| ① Section | ⑥ Remarks |
| ② Order of removal | ⑦ Removal point |
| ③ Note on removal and reassembly | ⑧ Extent of removal |
| ④ Part name | ⑨ Symbol mark |
| ⑤ Q'ty | ⑩ Exploded diagram |

① YPVS GOVERNOR ENG

YPVS GOVERNOR PREPARATION FOR REMOVAL

• Drain the coolant.
• Remove the power valve housing and push rod.

⑨

② YPVS GOVERNOR ENG

NOTE ON REMOVAL AND REASSEMBLY

• With the engine mounted, the following parts can be removed.
• Before servicing, clean the parts, and take care so that foreign material do not enter the crankcase.
• Remove the gasket adhered on the contacting surface.
• For reassembly, the removed parts should be cleaned with solvent, and apply the transmission oil onto the sliding surface.

Extent of removal: ① YPVS governor removal

Extent of removal	Order	Part name	Qty	Remarks
	1	Crankcase cover (right)	1	Refer to "REMOVAL POINTS".
	2	Dowel pin	1	
	3	Resistor	1	
	4	Ball	4	
	5	Reflector weight	1	
	6	Pin washer	4	
	7	Spid bush	2	
	8	Collar	1	
	9	Flare	1	
	10	Spacer	1	
	11	Compression spring	1	
	12	Governor gear	1	
	13	Governor shaft	1	

③

REMOVAL POINTS

PUSH ROD

1. Remove:
• Nut (push rod) ①
• Push rod ②

NOTE:
Insert the set pin ⑩ included in owner's tool kit to remove the nut (push rod).

GOVERNOR

1. Remove:
• Dowel pin ①
• While compressing the spring, remove the dowel pin.

⑦

① GEN INFO 	② SPEC 	
③ INSP ADJ 	④ ENG 	
⑤ CHAS 	⑥ ELEC 	
⑦ TUN 	⑧ 	
⑨ 	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	⑰ 
⑱ 	⑲ 	⑳ 

ILLUSTRATED SYMBOLS (Refer to the illustration)

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

- ① General information
- ② Appendices
- ③ Regular inspection and adjustment
- ④ Engine
- ⑤ Chassis
- ⑥ Electrical
- ⑦ Tuning

Illustrated symbols ⑧ to ⑭ are used to identify the specifications appearing in the text.

- ⑧ With engine mounted
- ⑨ Special tool
- ⑩ Filling fluid
- ⑪ Lubricant
- ⑫ Tightening
- ⑬ Wear limit, clearance
- ⑭ Resistance (Ω), Voltage (V), Electric current (A)

Illustrated symbols ⑮ to ⑳ in the exploded diagram indicate grade of lubricant and location of lubrication point.

- ⑮ Apply gear oil
- ⑯ Apply engine mixing oil
- ⑰ Apply molybdenum disulfide oil
- ⑱ Apply lightweight lithium-soap base grease
- ⑲ Apply molybdenum disulfide grease
- ⑳ Apply locking agent (LOCTITE®)

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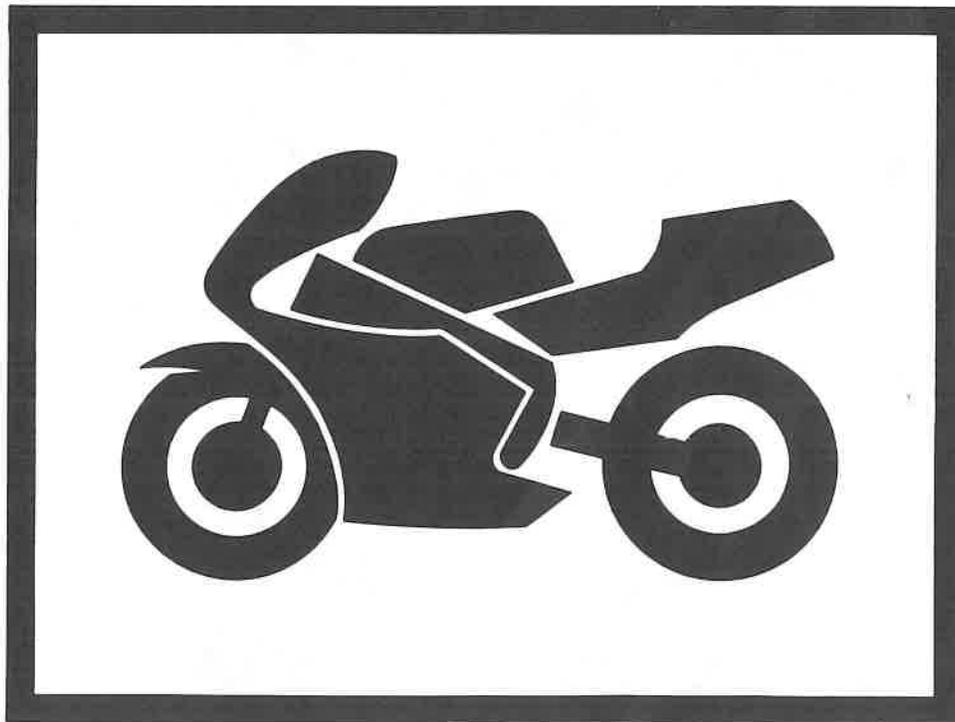
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CHAPTER 1 GENERAL INFORMATION

1



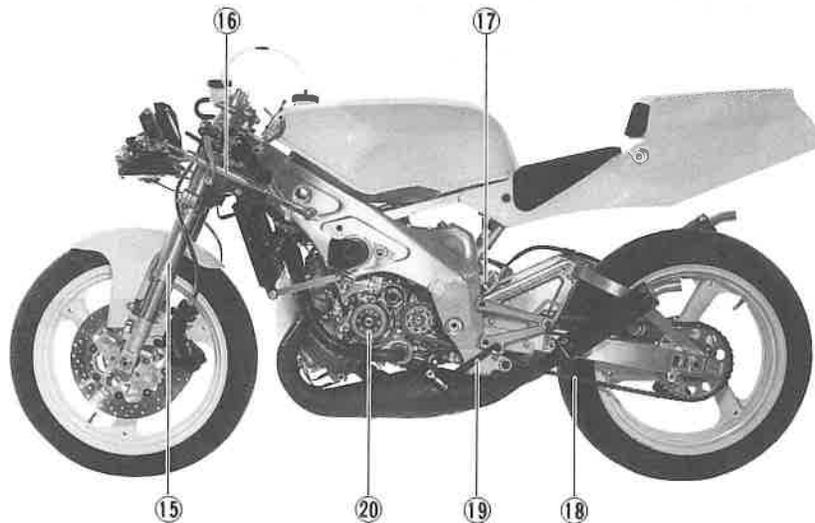
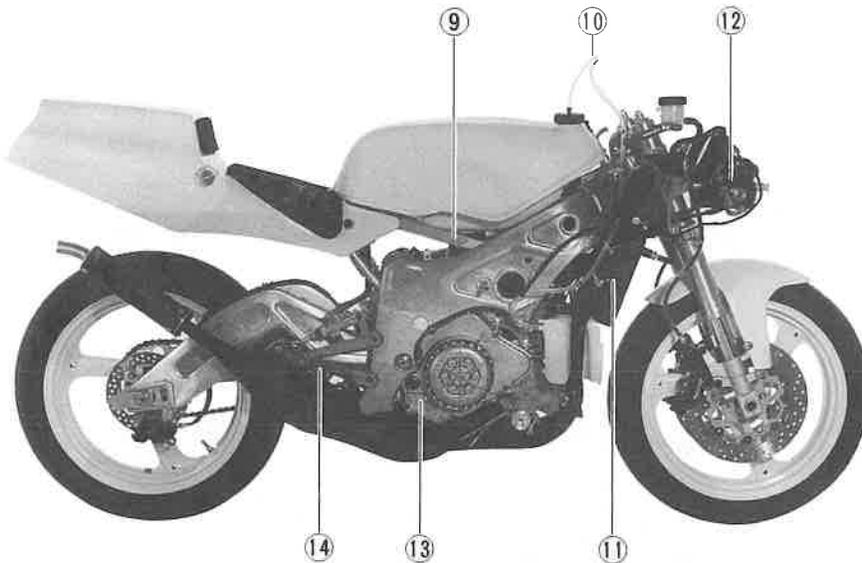
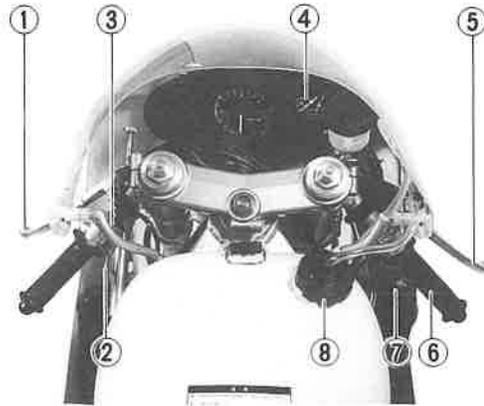


DESCRIPTION

- ① Clutch lever
- ② Starter lever (CHOKE)
- ③ "ENGINE STOP" button
- ④ Water temperature gauge
- ⑤ Front brake lever
- ⑥ Throttle grip
- ⑦ Radiator cap
- ⑧ Fuel tank cap
- ⑨ Fuel cock
- ⑩ Valve joint
- ⑪ Radiator
- ⑫ Servomotor
- ⑬ Check bolt (Transmission oil level)
- ⑭ Rear brake pedal
- ⑮ Front fork
- ⑯ Steering damper
- ⑰ Rear shock absorber
- ⑱ Drive chain
- ⑲ Shift pedal
- ⑳ CDI magneto

NOTE:

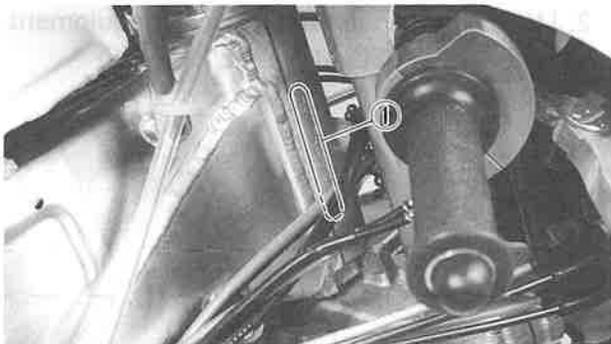
- The machine you have purchased may differ slightly from those shown in the photographs.
- Designs and specifications are subject to change without notice.



MACHINE IDENTIFICATION

There are two significant reasons for knowing the serial number of your machine:

1. When ordering parts, you can give the number to your Yamaha dealer for positive identification of the model you own.
2. If your bike is stolen, the authorities will need the number to search for and identify your machine.



**VEHICLE IDENTIFICATION NUMBER
(For USA, CDN and AUS)**

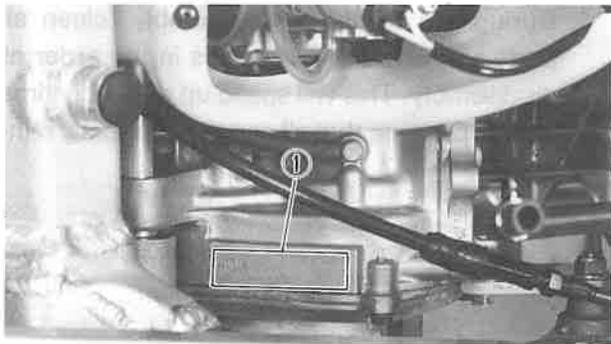
The vehicle identification number ① is stamped on the right of the steering head pipe.

**Starting Serial Number:
JYA4DPW0*NA000101**

**FRAME SERIAL NUMBER
(Except for USA, CDN and AUS)**

The frame serial number ① is stamped on the right of the steering head pipe.

**Starting Serial Number:
4DP-000101**



ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the elevated part of the right-side of the engine.

NOTE: _____

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

**Starting Serial Number:
4DP-000101**



1



IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY

1. Remove all dirt, mud, dust, and foreign material before removal and disassembly.

2. Use proper tools and cleaning equipment. Refer to "SPECIAL TOOL".

3. When disassembling the machine, keep mated parts together. They include gears, cylinders, pistons, and other mated parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.

4. During the machine disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.

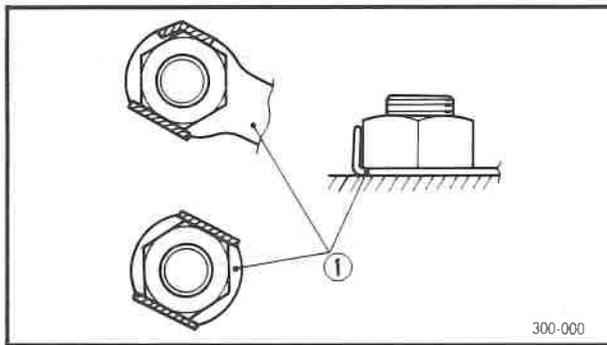
5. Keep away from fire.

ALL REPLACEMENT PARTS

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

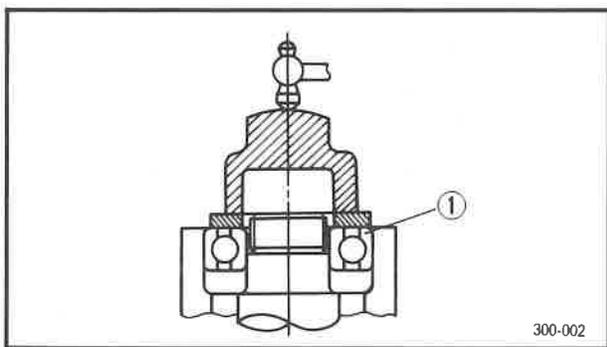
GASKETS, OIL SEALS AND O-RINGS

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



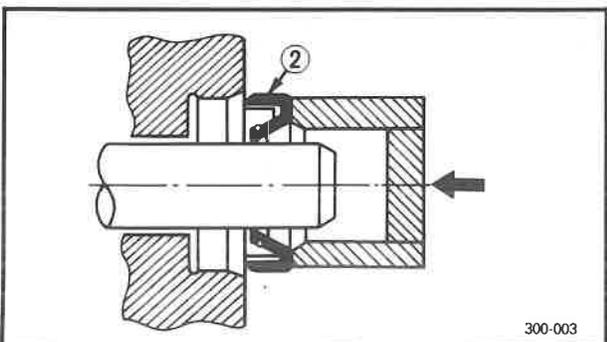
LOCK WASHERS/PLATES AND COTTER PINS

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



BEARINGS AND OIL SEALS

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

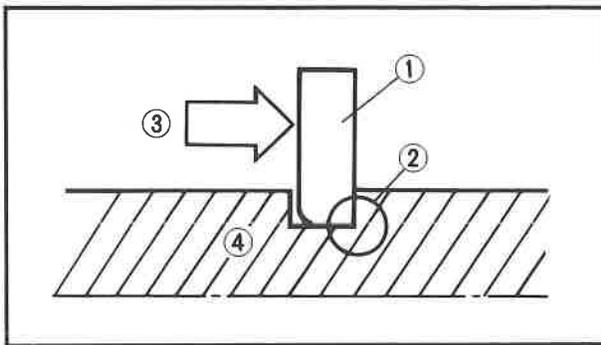


CAUTION:

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



1



CIRCLIPS

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

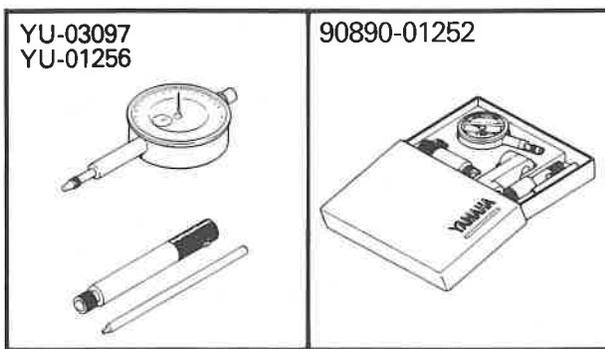
④ Shaft

SPECIAL TOOLS

The following special tools are required to perform maintenance, adjustments, and repairs on your machine. These tools can be obtained through your Yamaha dealer.

NOTE:

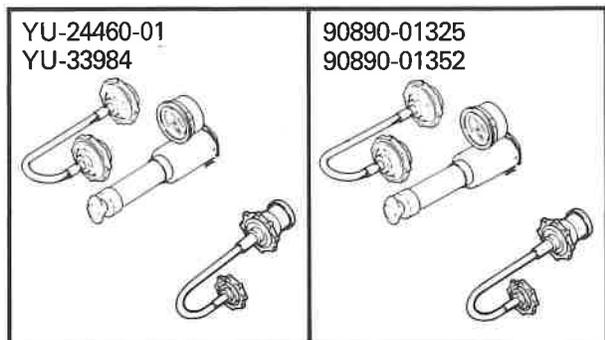
- For U.S.A. and Canada, use part number starting with "YM-" or "YU-".
- For others, use part number starting with "90890-".



FOR TUNE UP

1. Dial Gauge and Stand
P/N. YU-03097, YU-01256
90890-01252

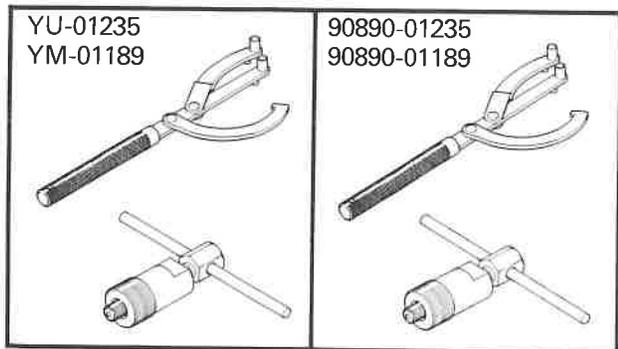
These tools are used to set the ignition timing.



FOR ENGINE SERVICE

1. Radiator Cap Tester and Adapter
Radiator Cap Tester P/N. YU-24460-01
90890-01325
Adapter P/N. YU-33984
90890-01352

These tools are used for checking the cooling system.

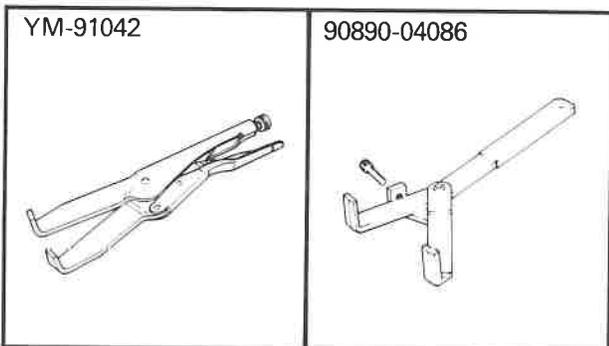


2. Rotor Holder and Rotor Puller
Holder P/N. YU-01235
90890-01235

This tool is used when loosening or tightening the flywheel magneto securing nut.

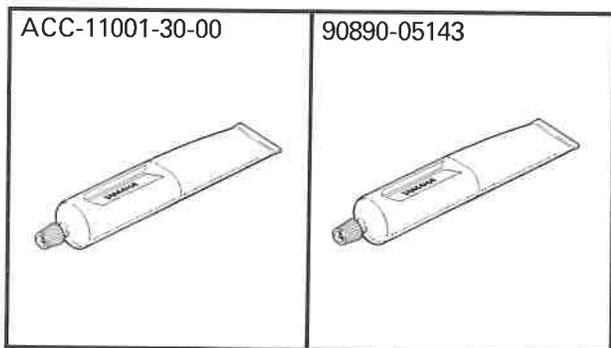
Puller P/N. YM-01189
90890-01189

This tool is used to remove the magneto.



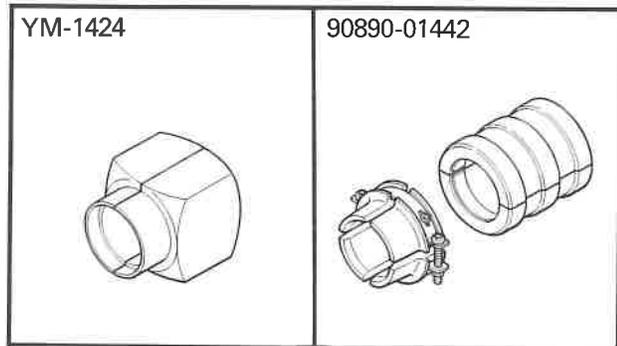
3. Clutch Holder
P/N. YM-91042
90890-04086

This tool is used to hold the clutch when removing or installing the clutch boss securing nut.



4. Quick Gasket®
P/N. ACC-11001-30-00
YAMAHA Bond No. 4
P/N. 90890-05143

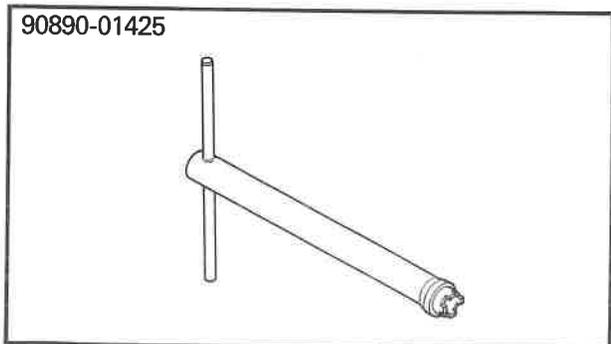
This sealant (Bond) is used for crankcase mating surfaces, etc.



FOR CHASSIS SERVICE

1. Fork Seal Driver
P/N. YM-1424
90890-01442

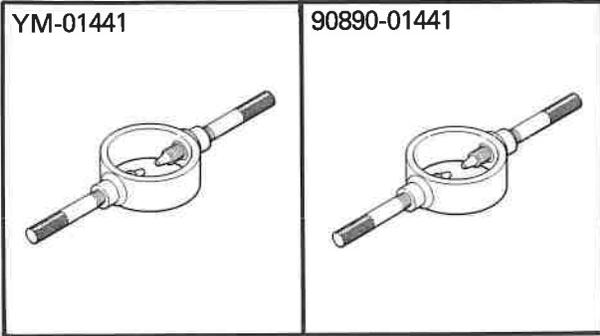
This tool is used when install the fork oil seal.



2. Damper Rod Holder
P/N. 90890-01425

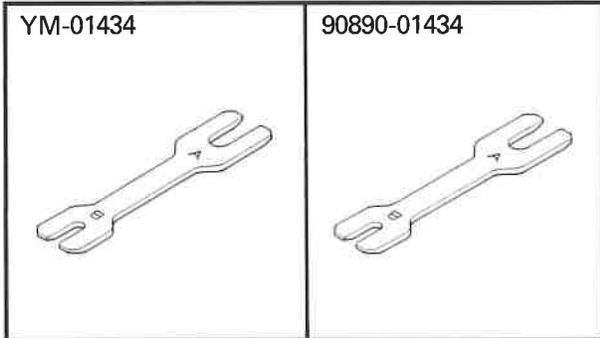
Use this tool to remove and install the damper rod.

1



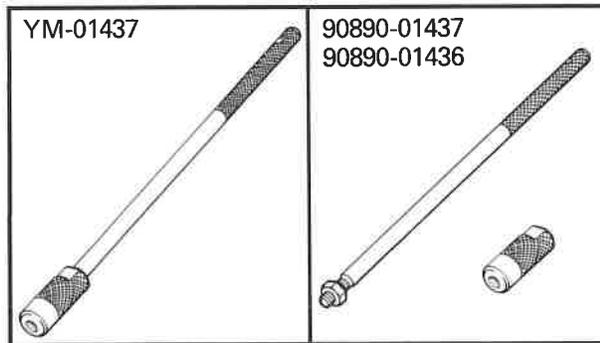
3. Fork Spring Compressor
P/N. YM-01441
90890-01441

This tool is used to compress the fork spring.



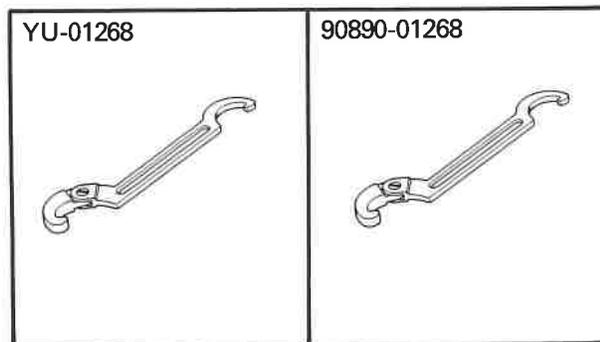
4. Rod Holder
P/N. YM-01434
90890-01434

This tool is used to hold the fork spring.



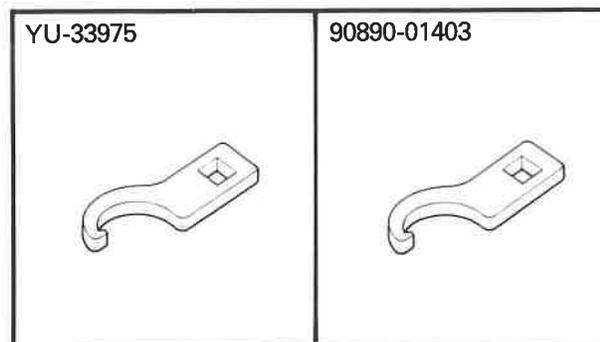
5. Rod Puller and Rod Puller Attachment
Rod Puller P/N. YM-01437
90890-01437

Rod Puller Attachment P/N. 90890-01436
These tools are used to pull up the fork damper rod.



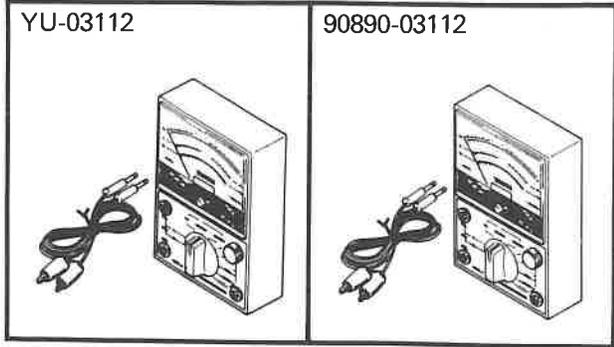
6. Ring Nut Wrench
P/N. YU-01268
90890-01268

This tool is used to loosen or tighten the steering ring nut.



7. Ring Nut Wrench
P/N. YU-33975
90890-01403

This tool is used when tighten the steering ring nut to specification.

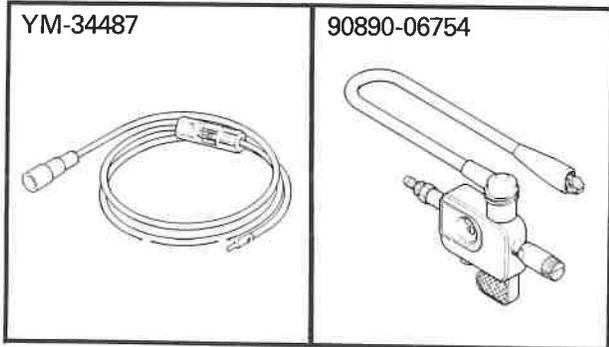


FOR ELECTRICAL SERVICE

1. Yamaha Pocket Tester
P/N. YU-03112
90890-03112

Use this tool to inspect the coil resistance, output voltage and amperage.

1



2. Dynamic Spark Tester
P/N. YM-34487
Ignition Checker
P/N. 90890-06754

This instrument is necessary for checking the ignition system components.



1



CONTROL FUNCTIONS

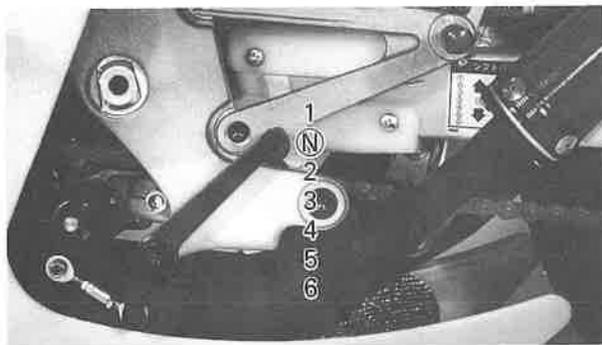
"ENGINE STOP" BUTTON

The "ENGINE STOP" button ① is located on the left handlebar. Continue pushing the "ENGINE STOP" button till the engine comes to a stop.



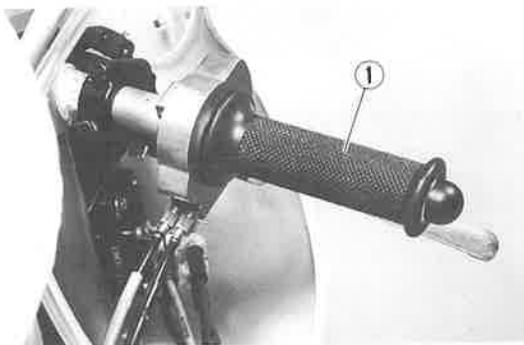
CLUTCH LEVER

The clutch lever ① is located on the left handlebar; it disengages or engages the clutch. Pull the clutch lever to the handlebar to disengage the clutch, and release the lever to engage the clutch. The lever should be pulled rapidly and released slowly for smooth starts.



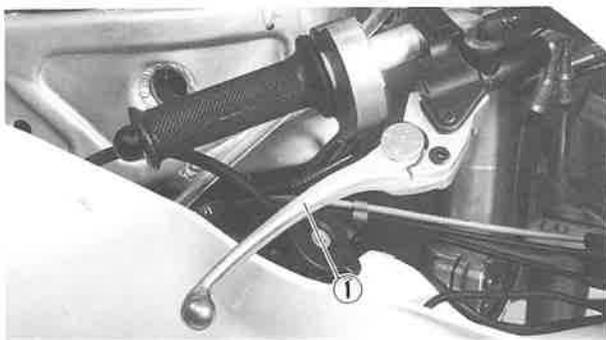
SHIFT PEDAL

The gear ratios of the constant-mesh 6-speed transmission are ideally spaced. The gears can be shifted by using the shift pedal ① on the left side of the engine.



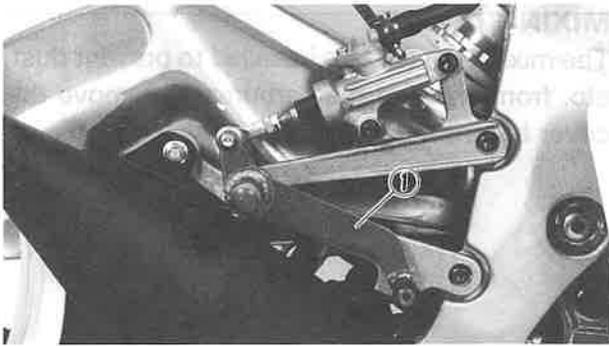
THROTTLE GRIP

The throttle grip ① is located on the right handlebar; it accelerates or decelerates the engine. For acceleration, turn the grip toward you; for deceleration, turn it away from you.

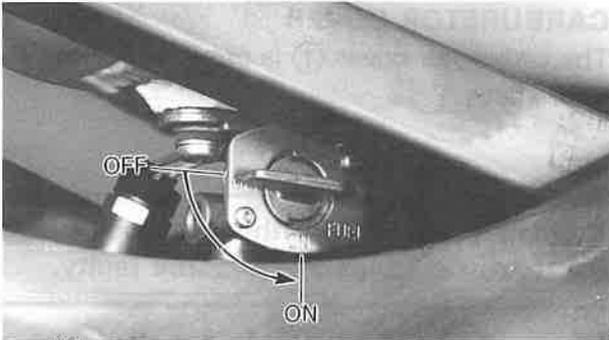


FRONT BRAKE LEVER

The front brake lever ① is located on the right handlebar. Pull it toward the handlebar to activate the front brake.

**REAR BRAKE PEDAL**

The rear brake pedal ① is located on the right side of the machine. Press down on the brake pedal to activate the rear brake.

**FUEL COCK**

The fuel cock supplies fuel from the tank to the carburetor while filtering the fuel. The fuel cock has two positions:

OFF: With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.

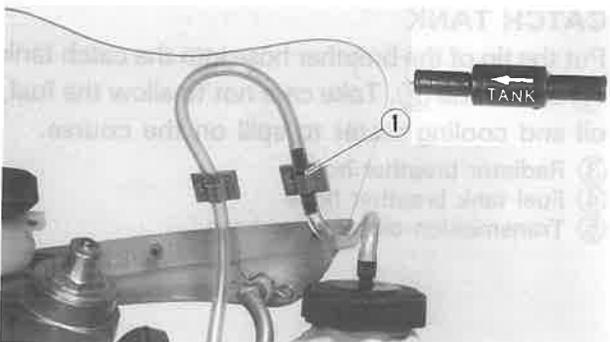
ON: With the lever in this position, fuel flows to the carburetor. Normal riding is done with the lever in this position.

**STARTER LEVER (CHOKE)**

When cold, the engine requires a richer air-fuel mixture for starting. A separate starter circuit, which is controlled by the starter lever ①, supplies this mixture. Push the starter lever ① out to open the circuit for starting. When the engine has warmed up pull it in to close the circuit.

**WATER TEMPERATURE GAUGE**

This gauge indicates the cooling water temperature. Water temperature may be 70°C (158°F) when engine is operated in good conditions.

**VALVE JOINT**

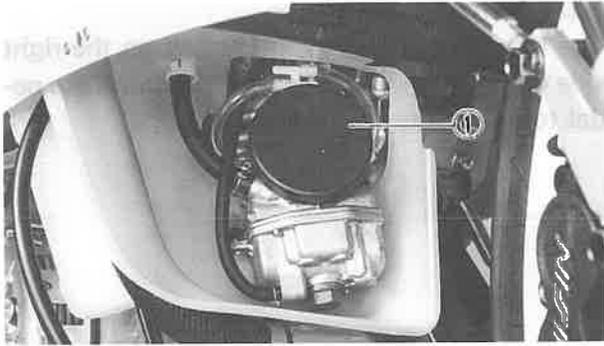
This valve joint ① prevents fuel from flowing out and is installed to the fuel tank breather hose.

CAUTION:

In this installation, make sure the arrow faces the fuel tank.

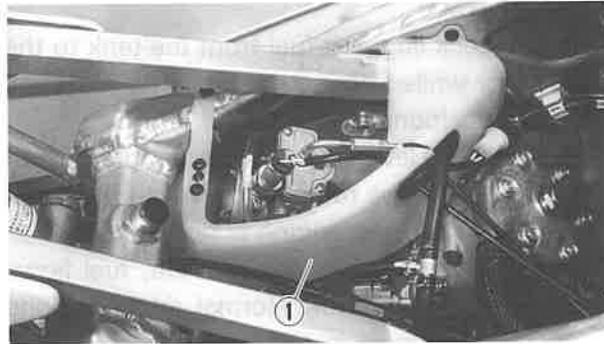


1



MIXING COVER

The mixing cover ① is installed to prevent dust, etc. from entering the carburetor. Remove this cover before starting the engine.

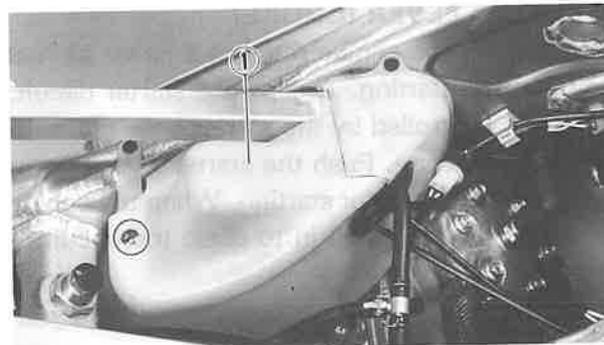


CARBURETOR COVER

The carburetor cover ① is provided for carburetor space.

CAUTION:

If the machine is run without this cover, the carburetor settings will become faulty.



CARBURETOR UPPER COVER (LEFT SIDE ONLY)

When running in rainy weather, fit this carburetor upper cover ① as shown.

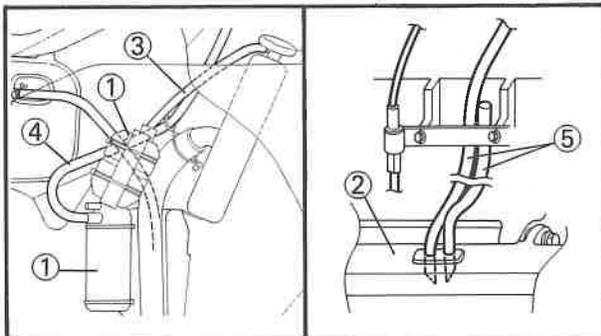


LOWER COWL

Make sure that the lower cowl ① is installed before riding the machine.

CAUTION:

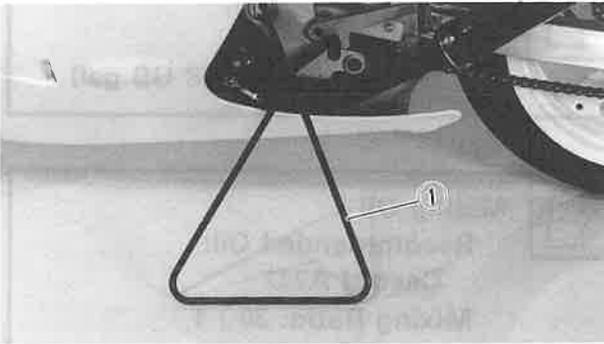
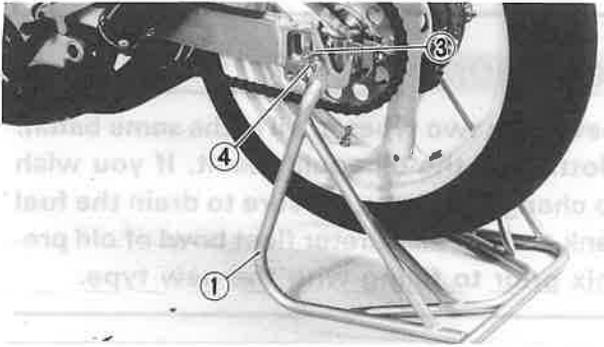
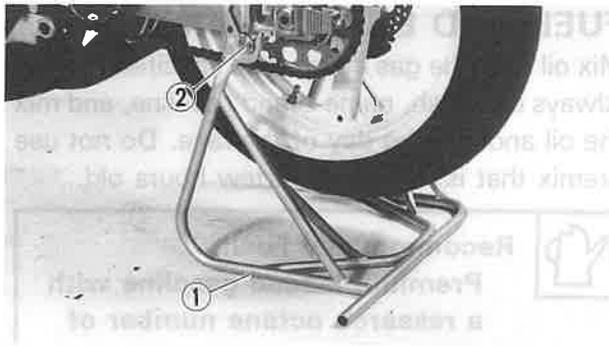
Otherwise, stone pieces or the like may enter the carburetor with the consequent damage to the engine.



CATCH TANK

Put the tip of the breather hose into the catch tank ① and frame ②. Take care not to allow the fuel, oil and cooling water to spill on the course.

- ③ Radiator breather hose
- ④ Fuel tank breather hose
- ⑤ Transmission oil breather hose

**DETACHABLE MAINSTAND**

This mainstand ① is used to support only the machine when standing or transporting it.

NOTE:

The mainstand can be used to support the machine two ways.

1. Stand bolts (with packing parts):
Install the stand bolts ② into the swingarm.
2. Stand shaft (with packing parts):
Insert the stand shaft ③ through the hole of the mainstand and rear wheel axle. Be sure to install the clip ④ in the end of the stand shaft.

⚠ WARNING

- Never apply additional force to the side stand.
- Remove this sidestand before starting out.

DETACHABLE SIDESTAND

This sidestand ① is used to support only the machine when standing or transporting it.

⚠ WARNING

- Never apply additional force to the side stand.
- Remove this sidestand before starting out.

1



1

FUEL AND ENGINE MIXING OIL

Mix oil with the gas at the ratio specified below. Always use fresh, name-brand gasoline, and mix the oil and gas the day of the race. Do not use premix that is more than a few hours old.

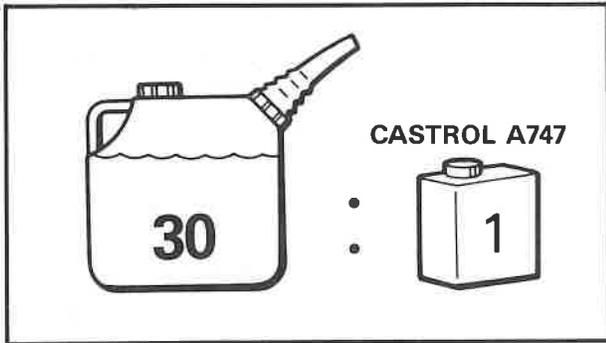


Recommended Fuel:

Premium leaded gasoline with a research octane number of 100 or higher.

CAUTION:

Never mix two types of oil in the same batch; clotting of the oil could result. If you wish to change oil types, be sure to drain the fuel tank and the carburetor float bowl of old premix prior to filling with the new type.



Fuel Tank Capacity:

23.0 L
(5.06 Imp gal, 6.08 US gal)



Mixing Oil

Recommended Oil:
Castrol A747
Mixing Ratio: 30 : 1

PRE-OPERATION CHECK LIST

Before riding for break-in operation, practice or a race, make sure the machine is in good operating condition.

Before using this machine, check the following points.

NOTE:

1. The brake disc is coated with a rust inhibitor. Before pre-operation thoroughly remove it using a lacquer thinner.
2. For strage, a coolant is used. Before riding the machine remove it with cooling water. Refer to "INFORMATION BEFORE PRE-OPERATION".

1

Item	Routine	Page
Cooling water	Check that cooling water filled up to the radiator filler cap. Check the cooling system for leakage.	3-5 ~ 3-8
Fuel	Check that a fresh mixture of oil and gasoline is filled in the fuel tank. Check the fuel line for leakage.	1-13
Transmission Oil	Check that the oil level is correct. Check the crankcase for leakage.	3-12 ~ 3-13
Gear Shifter and Clutch	Check that gears can be shifted correctly in order and that the clutch operates smoothly.	3-8 ~ 3-9
Throttle Grip/Housing	Check that the throttle grip operation and free play are correctly adjusted. Lubricate the throttle grip and the housing, if necessary.	3-9 ~ 3-10
Brakes	Check the play of both front and rear brakes and their braking effect. Check brake disc surface.	3-15 ~ 3-17
Chain	Check chain slack and alignment. Check that the chain is lubricated properly.	3-18 ~ 3-19
Wheels	Check for excessive wear, tire pressure, tire wear.	3-27 ~ 3-28
Steering	Check that the handlebars can be turned smoothly and have no excessive play.	3-28 ~ 3-30
Front Forks and Rear Shock Absorber	Check that they operate smoothly and there is no oil leakage.	3-19 ~ 3-27
Cables (Wires)	Check that the clutch and throttle cables move smoothly. Check that they are not caught when the handlebars are turned or when the frontforks travel up and down.	3-32
Muffler	Check that the muffler is tightly mounted and has no cracks.	3-30 ~ 3-31
Sprocket	Check that the rear wheel sprocket tightening bolt is not loose.	—
Bolts and Nuts	Check the chassis and engine for loose bolts and nuts.	1-18 ~ 1-19
Lead Connectors	Check that the CDI magneto, CDI unit, and ignition coil are connected tightly.	—
Settings	Taking into account the result of pre race test-runs, —is the machine set suitably for the weather conditions and race course? Is inspection and maintenance completed?	—
Y.P.V.S.	Check operation.	3-10 ~ 3-13



STARTING AND BREAK-IN

CAUTION: _____

Before starting the machine, perform the checks in the pre-operation check list.

⚠ WARNING _____

Never start or run the engine in a closed area. The exhaust fumes are poisonous; they can cause loss of consciousness and death in a very short time. Always operate the machine in a well-ventilated area.

STARTING A COLD ENGINE

1. Turn the fuel cock to "ON" and push the starter lever (CHOKE).
2. Shift the transmission into "1st" gear.
3. Apply the clutch lever and push the machine.
4. After gaining some momentum, release the clutch lever.
5. As soon as the engine starts, quickly apply the clutch lever again and open the throttle grip slightly at the same time so as to sustain idling of the engine. Then, shift the transmission into neutral.
6. After applying full-throttle a few times, turn the choke lever to the original position. Take some time to allow the engine to warm up.

WARMING UP

Run the engine at varying speeds 5,000~6,000 r/min for 1~2 minutes. Fully warm up until the water temperature gauge reads 70°C (158°F) or so.

CAUTION: _____

Do not warm up the engine for extended periods.

**STARTING A WARM ENGINE**

Do not push the starter lever. Open throttle slightly.

CAUTION:

Observe the following break-in procedure during initial operation to ensure optimum performance and avoid engine damage.

1

BREAK-IN PROCEDURES

1. Before starting the engine, fill the fuel tank with a break-in oil-fuel mixture as follows.

**Mixing Oil:**

Castrol A747

Mixing Ratio:

20 : 1

2. Perform the pre-operation checks on the machine.
3. Start and warm up the engine. Check the operation of the controls and the "ENGINE STOP" button.

NOTE:

During break-in, mask part of the radiator core so that the water temperature is 50~75°C (122~167°F).

4. Operate machine at 9,000 r/min maximum and run about 20 km (13 miles). Check spark plug condition. Spark plug will show rich condition during break-in.
5. Allow engine to cool. Operate machine at 8,000~10,000 r/min and run about 30 km (20 miles). Very briefly, shift to higher gears (4th or 5th) and check full throttle response. Check spark plug condition.
6. Allow engine to cool. Operate machine at 11,000 r/min maximum and run about 5 km (3 miles). Full throttle and higher gears may be used, but avoid sustained full throttle operation. Check spark plug condition.
7. Allow engine to cool. Remove top end and inspect. Remove "high" spots on piston with No. 600 grit, wet sandpaper. Clean, and carefully reassemble.
8. Drain the break-in oil-fuel mixture from the fuel tank and refill with the specified mix.



- Restart the engine and check the operation of the machine throughout its entire operating range. Stop and check the spark plug condition. Restart the machine and operate it for about 50 km (30 miles). The machine will now be ready to race.

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CAUTION: _____

- After the break-in or before each race, you must check the entire machine for loose fittings and fasteners as per "TORQUECHECK POINTS".

Tighten all such fasteners as required.

- When any of the following parts have been replaced, they must be broken in.

CYLINDER AND CRANKSHAFT:

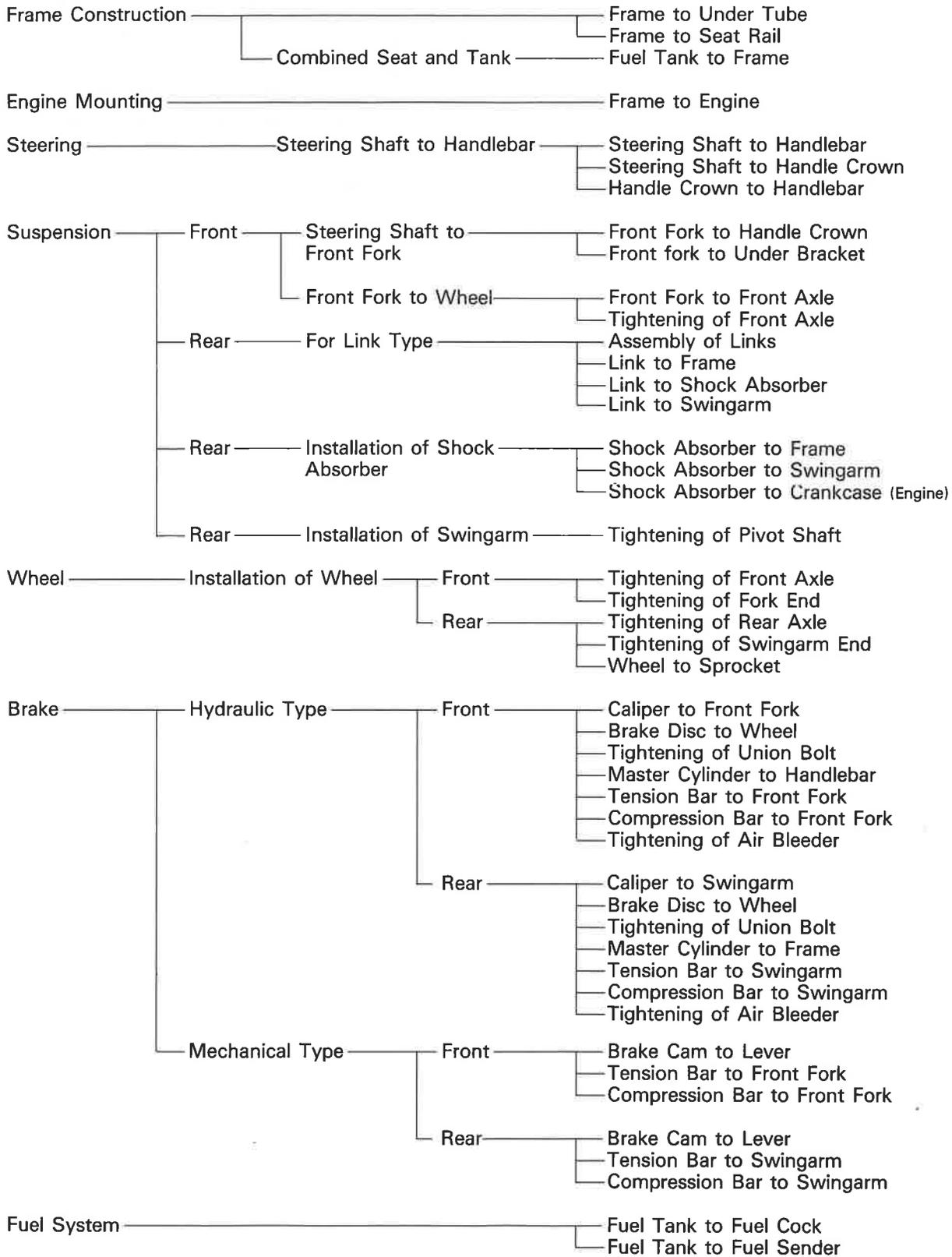
About one hour break-in operation is necessary.

PISTON, RING AND GEARS:

These parts require about 30 minutes of break-in operation at half-throttle or less. Observe the condition of the engine carefully during operation.

TORQUE CHECK POINTS

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NOTE: _____

- Concerning the tightening torque, refer to the MAINTENANCE SPECIFICATIONS in CHAPTER 2 SPECIFICATIONS.
 - The above chart indicates the TORQUE-CHECK POINTS for all models. Refer to only those items relate to your machine.
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CLEANING AND STORAGE

CLEANING

Frequent cleaning of your machine will enhance its appearance, maintain good overall performance, and extend the life of many components.

1. Before washing the machine, block off the end of the exhaust pipe to prevent water from entering. A plastic bag secured with a rubber band may be used for this purpose.
2. If the engine is excessively greasy, apply some degreaser to it with a paint brush. Do not apply degreaser to the chain, sprockets, or wheel axles.
3. Rinse the dirt and degreaser off with a garden hose; use only enough pressure to do the job.

CAUTION:

Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brakes and transmission seals. Many expensive repair bills have resulted from improper high pressure detergent applications such as those available in coin-operated car washers.

4. After the majority of the dirt has been hosed off, wash all surfaces with warm water and a mild detergent. Use an old toothbrush to clean hard-to-reach places.
5. Rinse the machine off immediately with clean water, and dry all surfaces with a soft towel or cloth.
6. Immediately after washing, remove excess water from the chain with a paper towel and lubricate the chain to prevent rust.
7. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
8. Automotive wax may be applied to all painted or chromed surfaces. Avoid combination cleaner-waxes, as they may contain abrasives.
9. After completing the above, start the engine and allow it to idle for several minutes.



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STORAGE

If your machine is to be stored for 60 days or more, some preventive measures must be taken to avoid deterioration. After cleaning the machine thoroughly, prepare it for storage as follows:

1. Drain the fuel tank, fuel lines, and the carburetor float chambers.
2. Remove the spark plugs, pour a tablespoon of SAE 10W30 motor oil in the spark plug hole, and reinstall the plug. With the engine stop switch pushed in, kick the engine over several times to coat the cylinder walls with oil.
3. Remove the drive chain, clean it thoroughly with solvent, and lubricate it. Reinstall the chain or store it in a plastic bag tied to the frame.
4. Lubricate all control cables.
5. Block the frame up to raise the wheels off the ground.
6. Tie a plastic bag over the exhaust pipe outlet to prevent moisture from entering.
7. If the machine is to be stored in a humid or salt-air environment, coat all exposed metal surfaces with a film of light oil. Do not apply oil to rubber parts or the seat cover.
8. Drain the cooling water completely. And then fill the coolant and water (50% : 50%) in the engine and radiator.

NOTE: _____

Make any necessary repairs before the machine is stored.
