YAMAHA

YZ100F
YZ125F

OWNER'S SERVICE MANUAL

L1T-11626-01-62

2W5-28199-11

IMPORTANT NOTICE

This motorcycle is designed strictly for competition use only. It is illegal to operate this vehicle on street. Off road use on public land may be illegal. Please check your local riding area regulations.

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

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

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

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

YZ100F/YZ125F OWNER'S SERVICE MANUAL
FIRST EDITION AUGUST 1978

BY YAMAHA MOTOR COMPANY
LIMITED, JAPAN
PRINTED IN JAPAN
LIT-11626-01-62

INTRODUCTION

Congratulations on your purchase of the Yamaha YZ100F/125F. This model represents the product of many years of Yamaha experience in the production of fine sporting, touring, and space-setting racing machines. You can now appreciate the high degrees of craftsmanship and reliability that have made Yamaha a leader in these fields.

PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING YOUR NEW MACHINE. This manual will provide you with a good basic understanding of the features, operation, and basic maintenance and inspection items of this vehicle. If you have any questions regarding the operation or maintenance of your machine, please consult your Yamaha dealer.

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Some data in this manual may become outdated due to improvements made to this model in the future.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.

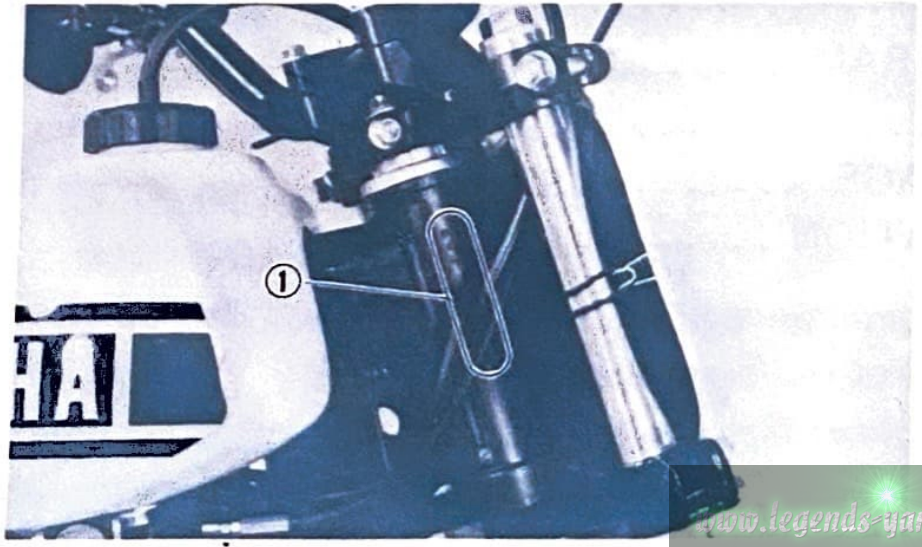
SERVICE DEPT
INTERNATIONAL DIVISION
YAMAHA MOTOR COMPANY, LTD.

CONTENTS

MACHINE IDENTIFICATION

Frame serial number

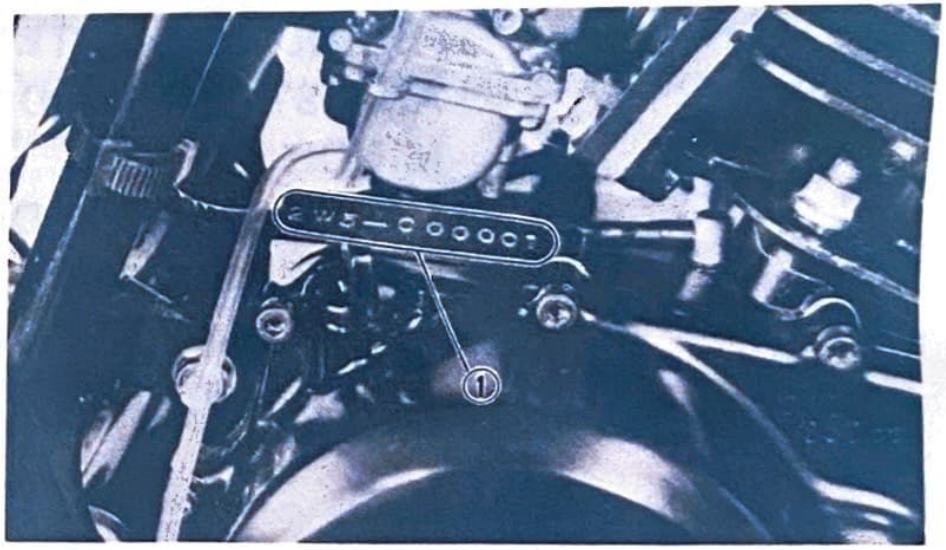
The frame serial number is stamped on the right side of the steering head pipe.



1. Frame serial number

Engine serial number

The engine serial number is stamped into the elevated part of the right rear section of the engine.



1. Engine serial number

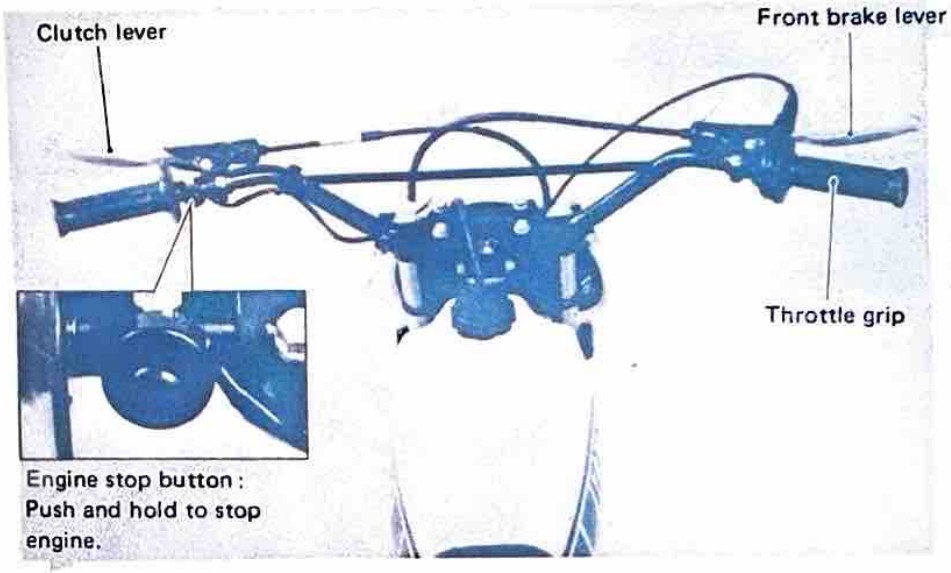
NOTE:

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

CONTROL FUNCTIONS

CAUTION:

Before riding this motorcycle, become thoroughly familiar with all operating controls and their function.
Consult your Yamaha dealer regarding any control or function you do not thoroughly understand.



WARNING:

This model is not equipped with highway approved lighting. This model is designed solely for competition use and should not be used on a street or highway at any time.
In most instances, it is illegal to ride this model on any public street or highway.

NOTE:

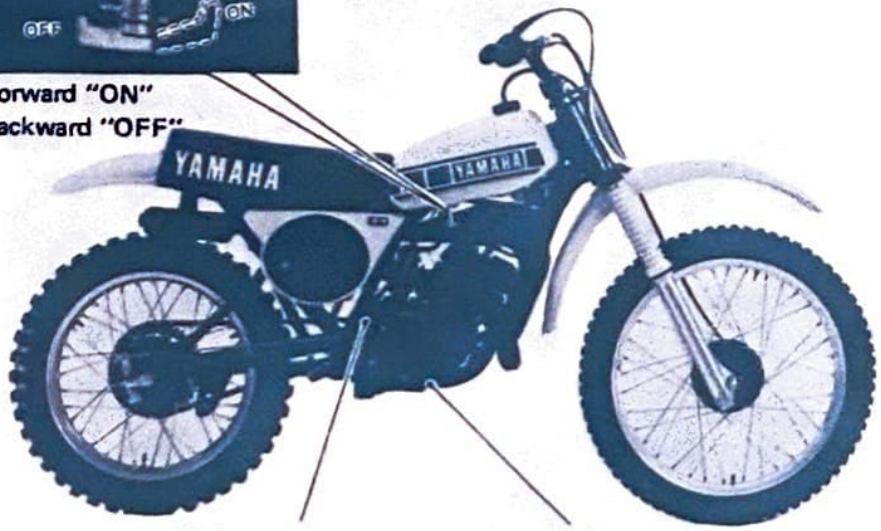
The motorcycle that you have purchased differs partly in design and specifications from that shown in this photo.

Fuel petcock

Forward "ON"
Backward "OFF"

Starter jet lever:

For starting a cold engine, push lever down to open the jet and kick the kick crank briskly.



Kick crank:

Primary kick starter system

Rear brake pedal

Shift pedal:

Racheting type 6-speed transmission

Chain tensioner

Fuel

Use premium gasoline with an octane rating of 90+ mixed with oil at a gas/oil ratio of 20 : 1. Always use fresh, name-brand gasoline. Always mix a fresh batch of fuel the morning of the race and do not retain a mixed batch overnight.

Fuel tank capacity:
YZ100F: 5.2 lit (5.5 US. qt)
YZ125F: 6.1 lit (6.4 US. qt)

Oil

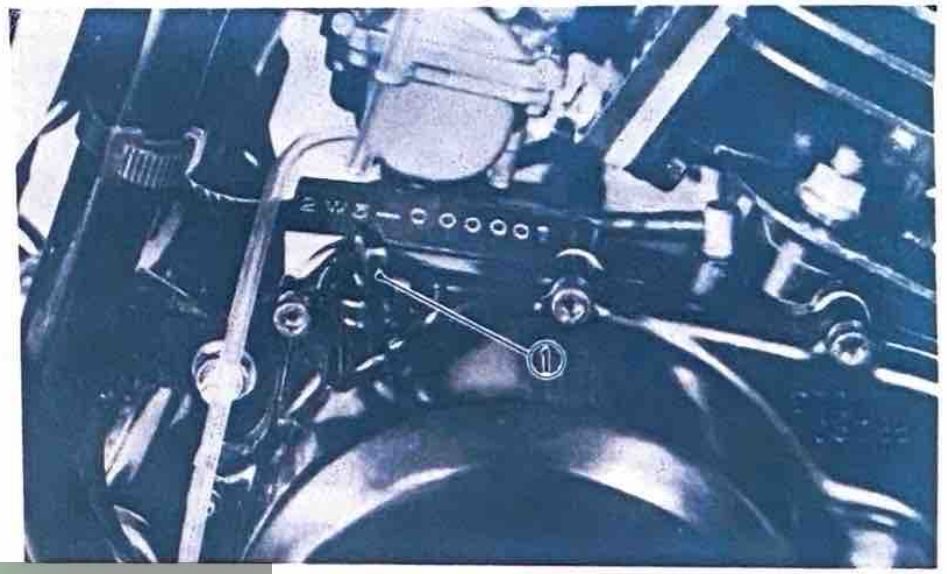
1. Engine mixing oil:

Recommended oil: Yamalube "R"
(Yamalube Racing 2-cycle oil)

Check the container top or label for service specification and mixing ratios.

2. Transmission oil:

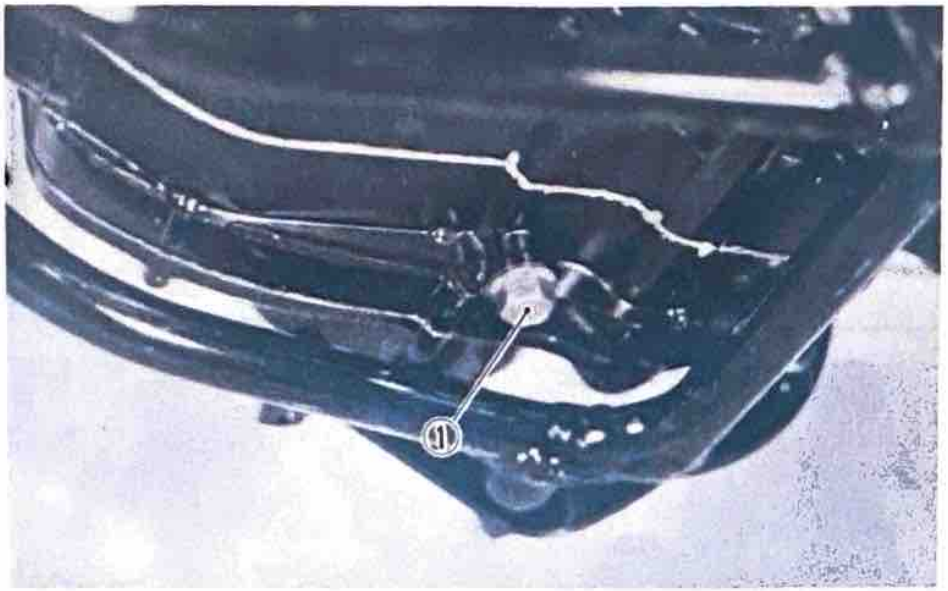
Recommended oil:
Yamalube 4-cycle oil or SAE 10W/30 "SE" motor oil



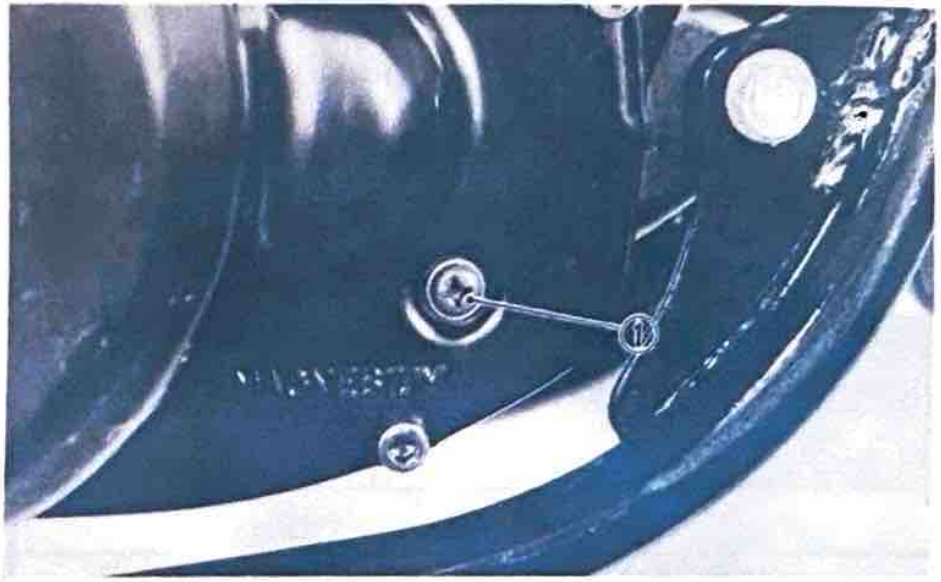
1. Filler plug

Transmission oil capacity:

Periodic oil change:	650 ~ 750 cc (0.7 ~ 0.8 US. qt)
Overhaul:	750 ~ 850 cc (0.8 ~ 0.9 US. qt)



1. Drain plug



1. Checking screw

On the right side of the engine there is a checking screw. To check, warm up the engine for 2~3 minutes. Place the motorcycle upright and remove the oil level checking screw. If oil flows out, the oil level is correct. The transmission oil should be drained and refilled every second race meet.

NOTE:

Do not add any chemical additives. Transmission oil also lubricates the clutch and additives could cause the clutch to slip.

PRE-OPERATION CHECKS

Before using this motorcycle please check the following points:

Item	Procedure	Page
Brake (Front & Rear)	Check operation/adjustment	23~25
Clutch	Check operation/adjustment	22, 23
Fuel tank	Fill with proper fuel/oil mix	4
Transmission	Check oil level/top-up as required	4, 5
Drive chain	Check alignment/free play/adjustment/lubrication	25, 26
Throttle	Check for proper cable operation	16
Wheels & tires	Check pressure/runout/spoke tightness/axle nuts	64, 65
Fittings/fasteners	Check all/tighten as necessary	—

NOTE:

Pre-operation checks should be made each time the machine is used. Such an inspection can be thoroughly accomplished in a very short time and the added safety it assures is more than worth the time involved.

STARTING AND OPERATION

CAUTION:

Prior to operating the machine, perform steps listed in pre-operation check list.

Starting a cold engine

Shift transmission into "NEUTRAL". Turn the fuel petcock to "ON" and operate the starter jet and completely close the throttle grip. Engage the kick starter and start the engine.

Warm-up

Run the engine at idle or slightly higher using the starter jet as required until the engine is warm. This procedure normally takes 1 to 2 minutes. To check, see if the engine responds normally to throttle with starter jet off.

CAUTION:

Do not operate engine for extended warm-up periods.

Starting with engine warm

Do not engage starter jet. Open throttle slightly. Engage the kick starter and start the engine.

NOTE:

Observe break-in procedures for initial operation.

Break-in procedures

1. Prior to starting, fill tank with a break-in gasoline/oil mixture of 15 : 1.
2. After fueling and pre-operational checks have been made, refer to "Starting and Operation" and start engine.

3. Allow engine to warm up. Check engine idle speed. Check operating controls and "Engine stop" button operation.
4. Operate machine in lower gears at moderate throttle settings for 5~10 minutes. Check spark plug condition. Spark plug will show rich condition during break-in.
5. Allow engine to cool. Repeat procedure, running for 10 minutes. Very briefly, shift to higher gears (5th or 6th) and check full throttle response. Check spark plug condition.
6. Allow engine to cool. Repeat procedure, running for 10 minutes. 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. Remove break-in fuel/oil mixture from tank. Refill with 20 : 1 operation fuel/-oil mixture. Check entire unit for loose or mis-adjusted fittings/controls/fasteners.
9. Re-start engine and check through entire operating range thoroughly. Stop. Check spark plug condition. Re-start. After 10~15 minutes operation, machine is ready to race.

PERIODIC MAINTENANCE

The maintenance and lubrication schedule chart should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical locations, and a variety of individual uses all tend to demand that each owner alter this time schedule to match his environment.

For example, if the motorcycle is continually operated in an area of high humidity then all parts must be lubricated much more frequently than shown on the chart to avoid rust and damage. If you are in doubt as to how closely you can follow these time recommendations, check with the Yamaha dealer in your area.

MAINTENANCE AND LUBRICATION SCHEDULE CHART

Item	Recommended lubricant (By type *)	Every heat (moto)	Every meet	Every second	Every third	Every fifth	As required
PISTON Inspect seizure Clean Replace			○ ○		○		
PISTON RING Replace				○			
CYLINDER HEAD Inspect distortion Clean Replace Check head nut torque			○ ○ ○				○
CYLINDER Inspect seizure Clean Replace Check cylinder nut			○ ○ ○				○
CLUTCH Adjust Inspect plates Replace			○		○		○
TRANSMISSION Change oil Inspect gears and shift fork Replace bearing	Yamalube 4-cycle oil or SAE 10W/30 "SE" motor oil			○		(○) ○	○

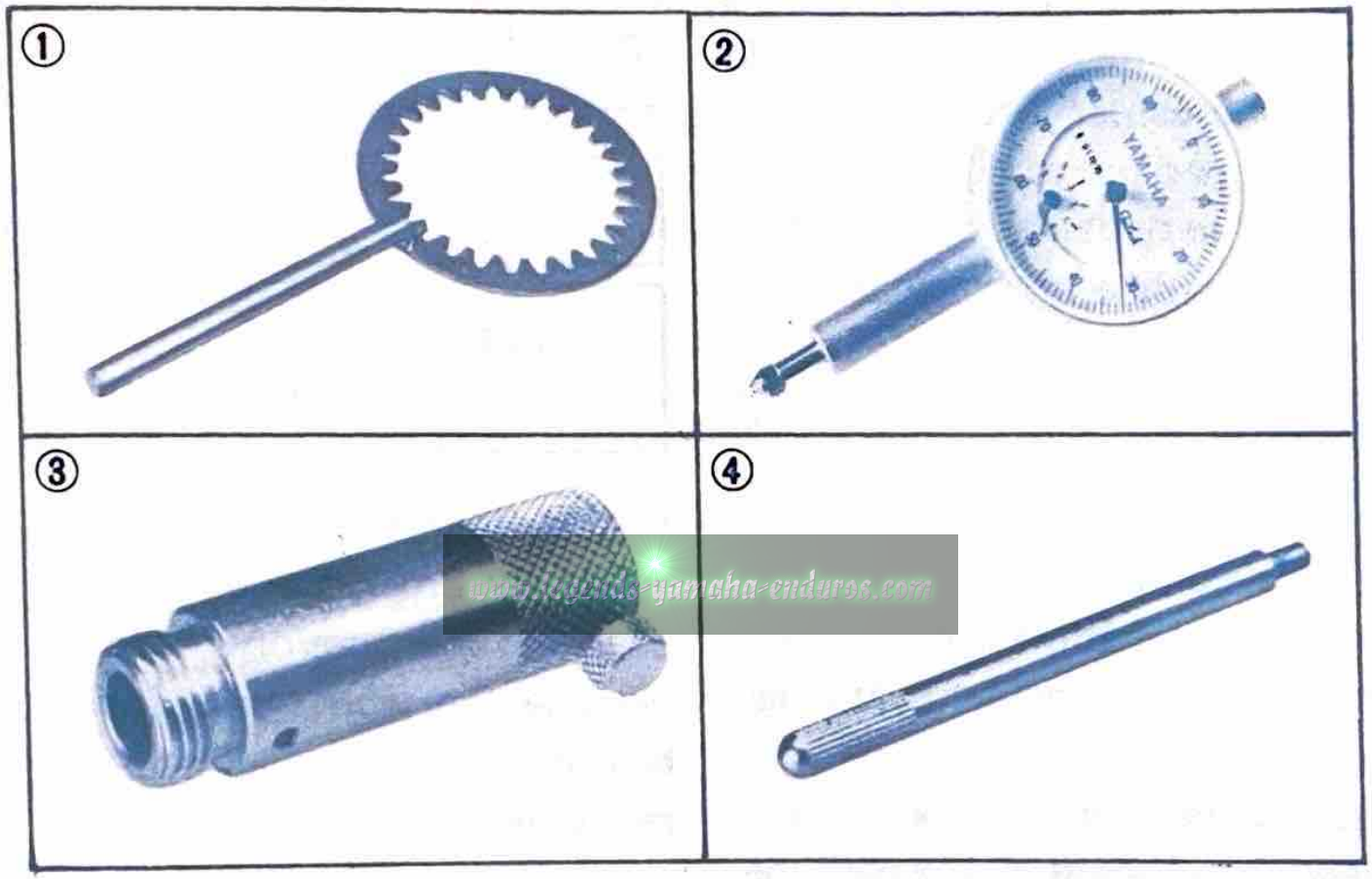
Item	Recommended lubricant (By type *)	Every heat (moto)	Every meet	Every second	Every third	Every fifth	As required
ENGINE MAIN BEARING Replace						○	
CONNECTING ROD Inspect bearings Replace						○	○
PISTON PIN Inspect Replace			○				○
ROTOR NUT Torque							○ (E/G Overhaul)
KICK STARTER Inspect idle gear Replace							○ ○
EXHAUST SYSTEM Inspect crack Clean		○				○	
CARBURETOR Check/Adjust/Tighten Clean			○ ○				
AIR FILTER Clean and oil Replace	SAE 10W/30 motor oil	(○)	○				○

Item	Recommended lubricant (By type *)	Every heat (moto)	Every meet	Every second	Every third	Every fifth	As required
SPARK PLUG Replace Inspect condition		 ○					 ○
DRIVE CHAIN Clean/Lubricate Check tension and alignment Replace	Yamaha Chain and Cable Lube or SAE10W/30 motor oil	○ ○			 ○		
FRAME Clean/Inspect			 ○				
FUEL TANK AND PETCOCK Clean			 ○				
FRONT FORKS Drain and refill Replace seals	Yamaha fork oil 10 wt, 20 wt				 ○		 ○
REAR SHOCK ABSORBER Inspect Adjust			 ○ ○				
STEERING HEAD Inspect Clean/Lubricate Replace	Medium weight wheel bearing grease			 ○	 ○		 ○
SWING ARM Inspect Lubricate Replace tensioner guide	Medium weight wheel bearing grease		 ○ ○	 ○			

Item	Recommended lubricant (By type *)	Every heat (moto)	Every meet	Every second	Every third	Every fifth	As required
BRAKE							
Clean/Inspect/Adjust			○				
Replace							○
WHEELS AND TIRES							
Check pressure			○				
Check runout			○				
Check spoke tension		○					
Check bearings			○				
Replace bearings							○
CONTROL CABLES							
Routing (Connection)	Yamaha Chain and Cable Lube or SAE 10W/30 motor oil		○				
Inspect			○				
Lubricate			○				
CLUTCH AND BRAKE PIVOT							
Lubricate	Medium weight wheel bearing grease		○				
Retighten		○					

SPECIAL TOOLS

	Part name	Part No.
1	Clutch holding tool	90890-01022
2	Dial gauge	90890-03002
3	Dial gauge stand	90890-01195
4	Dial gauge needle	90890-03042



ADJUSTMENTS AND MAINTENANCE

Spark plug

The spark plug in your machine indicates how the engine is operating. If the engine is operating correctly, and the machine is being ridden correctly, then the tip of the white insulator around the center electrode of the spark plug will be a medium to light tan color.
If the porcelain is a very dark brown or black color, then a plug with a hotter heat range may be required.
This situation is quite common during the engine break-in period. However, use the standard plug. If the insulator tip shows a very light tan or white color or is actually pure white or if the electrodes show signs of melting, then a spark plug with a colder heat range is required.
Remember, the insulator must be a medium to light tan color. If it is not, check carburetion, timing, and ignition adjustments.
If the situation persists, consult your Authorized Yamaha Dealer.
Do not attempt to experiment with different heat range spark plugs. This takes an experienced eye, to gauge the proper spark plug heat range to use and to determine if the spark plug itself is at fault.

For normal operation use:
N-59G/Champion

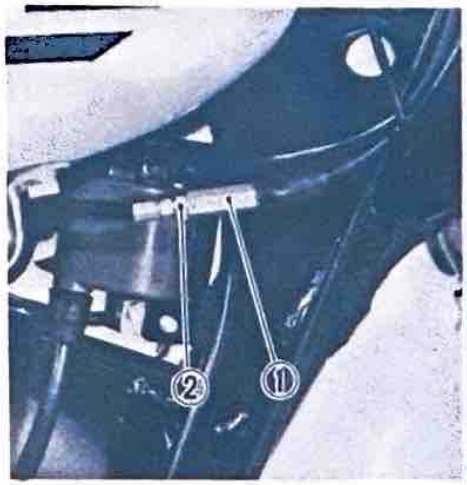
Spark plug gap:
0.7 mm (0.028 in)

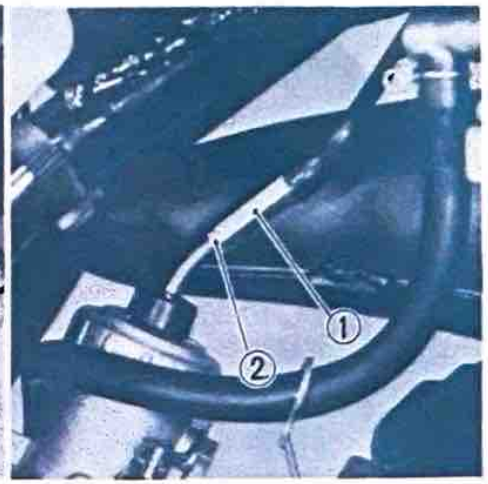
Engine conditions will cause any spark plug to slowly break down and erode. If erosion begins to increase, or if the electrodes finally become too worn, or if for any reason you believe the spark plug is not functioning correctly, replace it.

When installing the plug, always clean the gasket surface, use a new gasket, wipe off any grime that might be present on the surface of the spark plug, and torque the spark plug properly.

Spark plug torque:
2.5 m-kg (18 ft-lb)

The spark plug must be removed and checked prior to using the machine. Check electrode wear, insulator color, and electrode gap.





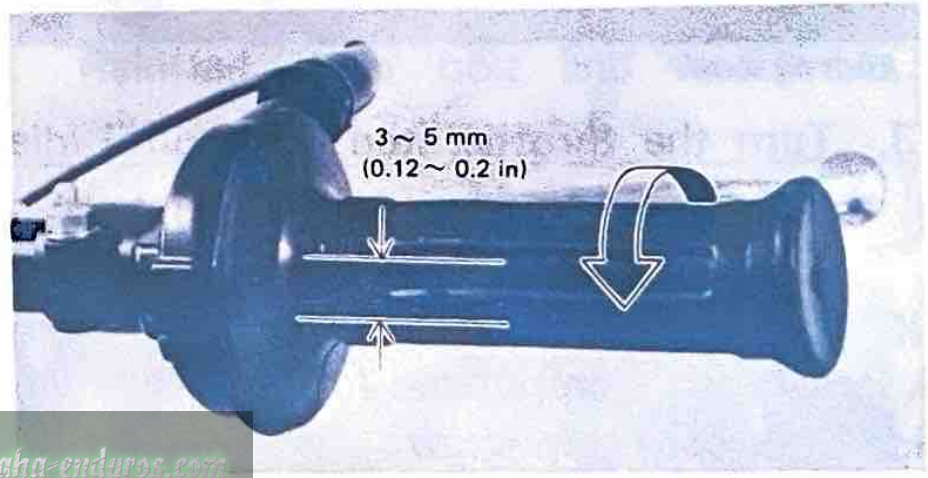
1. Adjuster 2. Lock nut

CARBURETOR

Throttle cable adjustment

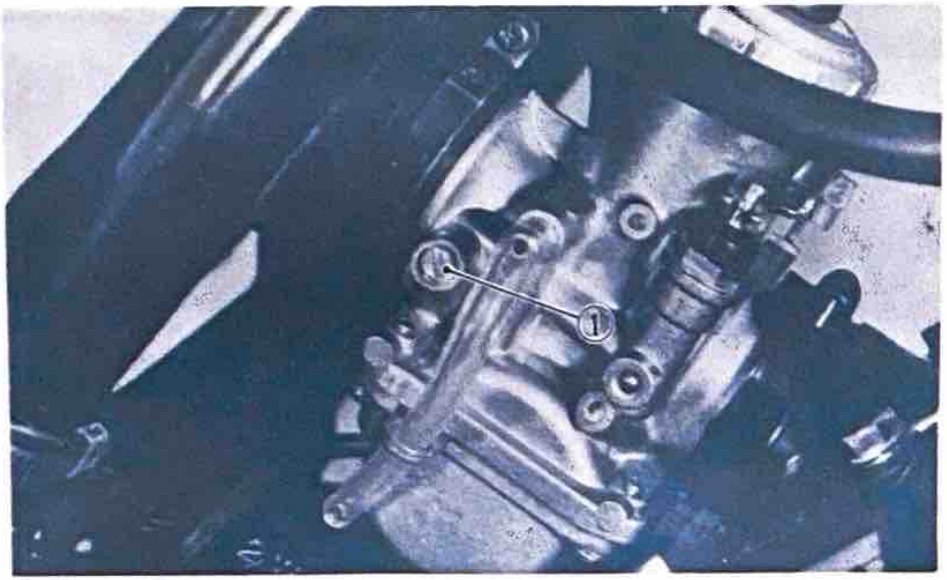
Check play in turning direction of throttle grip. The play should be 3~ 5 mm (0.12~ 0.2 in) at grip flange, loosen the lock nut and turn the wire adjuster to make the necessary adjustment.

Tighten the adjuster lock nut.



Idle speed adjustments

1. Turn pilot air screw in until lightly seated.
2. Back out 1-1/2 turns.
   Start the engine and warm it up.



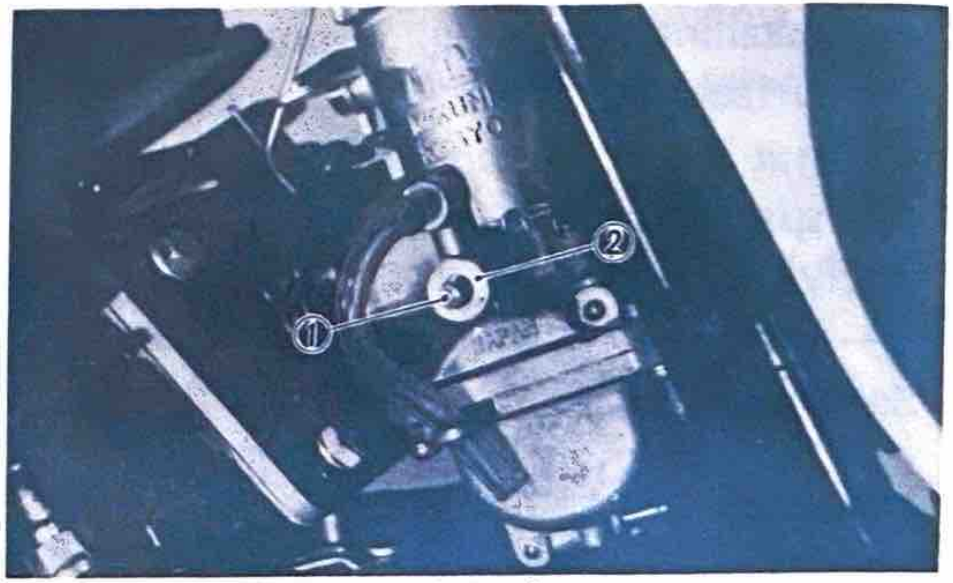
1. Pilot air screw

3. Turn the throttle stop screw until idle is at desired r/min.

NOTE:

A lock nut is incorporated for positive retention of throttle stop screw.

4. Turn the pilot air screw in or out until idle speed is at highest r/min.
5. Turn the throttle stop screw in or out until idle speed is at desired r/min.



1. Throttle stop screw 2. Lock nut

NOTE:

Pilot air and throttle stop screws should be so adjusted that engine response from idle position is rapid and without hesitation.

Pilot air screw: Back out 1-1/2 turns.
Idle speed: As desired

If the engine, when warm, hesitates after adjusting as described, turn the idle air mixture screw in or out in 1/4 turn increments until the problem is eliminated.

Replacement of main jet

NOTE:

Generally, in a race held in the rain or at altitudes, the main jet should be replaced by a one-step smaller type.

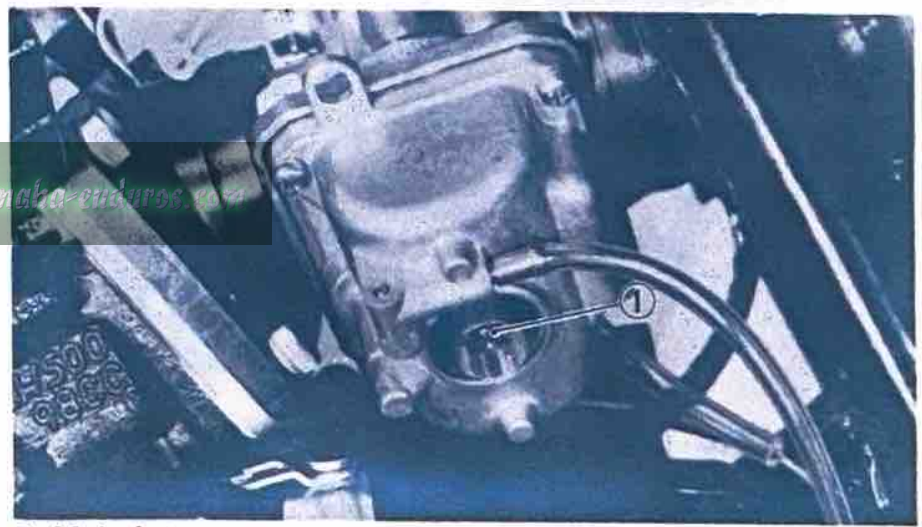
1. Turn fuel petcock lever to the "OFF" position.
2. Remove the gasoline tank fuel line into from the fitting at the carburetor.
3. Loosen the manifold and inlet joint bands (hose clamps).
4. Rotate carburetor, exposing main jet cover bolt.
5. Remove bolt. Main jet is located directly behind bolt.

WARNING:

Removing the main jet cover bolt will allow the fuel in the float bowl to drain. Do not remove if engine is hot. Place a rag under carburetor to catch overflow. Remove bolt in well-ventilated area. Do not remove near open flame. Always clean and dry machine after reassembly.

6. Remove the main jet. Change as required. Reinstall cover bolt and reassemble, reversing steps 2 through 5.

Main jet: YZ100F: #200, YZ125F: # 280



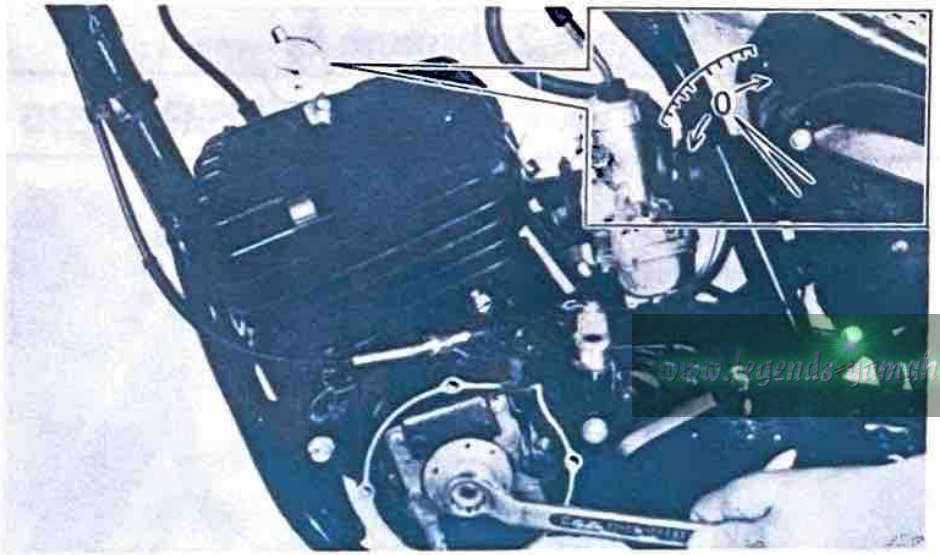
1. Main jet

Ignition timing

Ignition timing must be set with a dial gauge (to determine piston position).

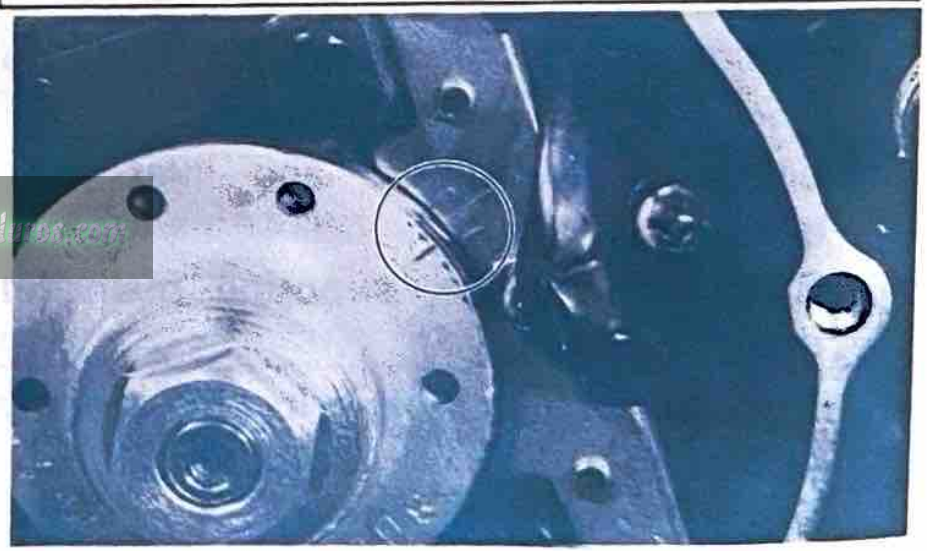
Proceed as follows:

1. Remove spark plug, muffler and screw Dial Gauge Stand into spark plug hole.
2. Insert Dial Gauge Assembly with a 56 mm (2.2 in) extension (needle) into stand.
3. Remove left engine crankcase cover.

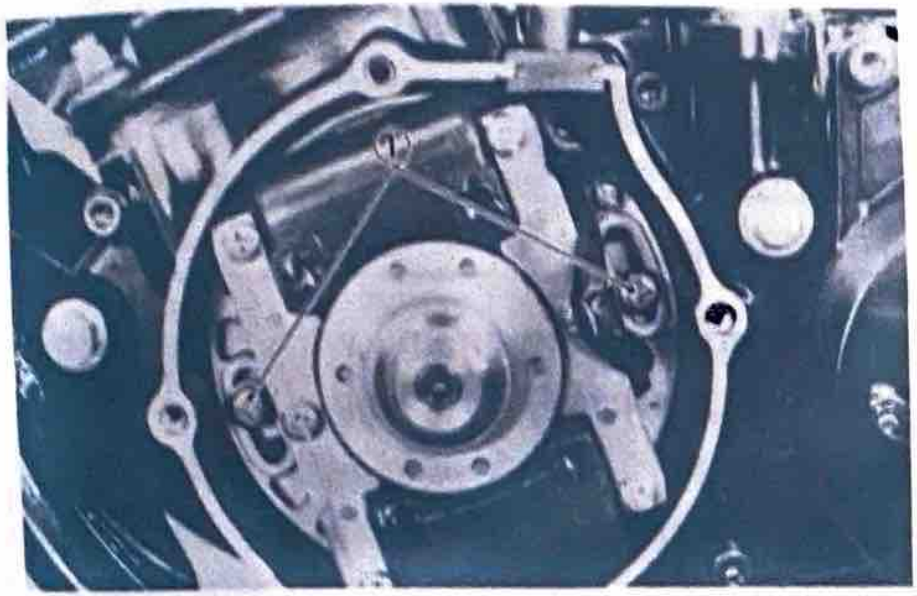


4. Rotate rotor until piston is at top-dead center (T.D.C.). Tighten set screw on dial gauge stand to secure dial gauge assembly. Set the zero on dial gauge face to line up exactly with dial gauge needle. Rotate rotor back and forth to be sure that gauge needle does not go past zero.
5. Starting at T.D.C., rotate rotor clockwise until dial indicator reads 0.8 mm (0.031 in)(YZ125F: 1.1 mm (0.043 in)) before top-dead center (B.T.D.C.)

Ignition timing:
YZ100F: 0.8± 0.15 mm (0.031± 0.006 in)
YZ125F: 1.1 ±0.15 mm (0.043± 0.006 in)



6. Check to see that the rotor timing mark aligns with the stator timing mark. To adjust, loosen the two stator retaining screws and rotate the stator. Tighten screws and recheck the ignition timing.



1. Retaining screw

7. Remove dial gauge assembly and stand. Replace spark plug.

Spark plug torque: 2.5 m-kg (18 ft-lb)

8. Replace engine crankcase cover.

Air filter cleaning

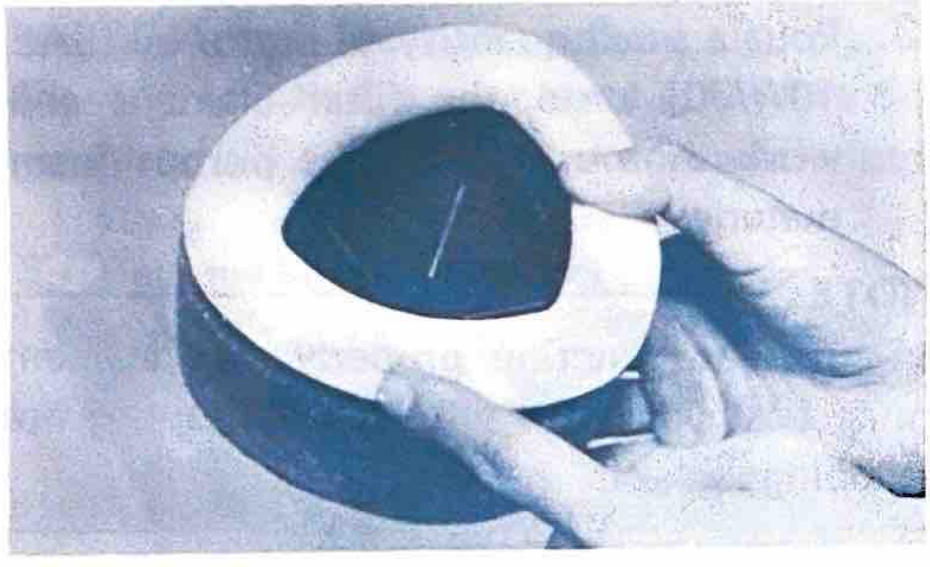
1. Wash the element gently, but thoroughly, in solvent.
2. Squeeze the excess solvent out of the element and let dry.
3. Pour a small quantity of motor oil (SAE 10W/30) onto the filter element and work thoroughly into the porous foam material.

NOTE:

In order to function properly, the element must be damp with oil at all times, but not dripping with oil.

4. Re-insert the filter element guide into the element.

5. Coat the sealing edges of the filter element with light grease. This will provide an air-tight seal between the filter case cover and filter seat.



6. Reinstall the element assembly and parts removed for access.

NOTE:

Each time filter element maintenance is performed, check the air inlet to the filter case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an air-tight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine.

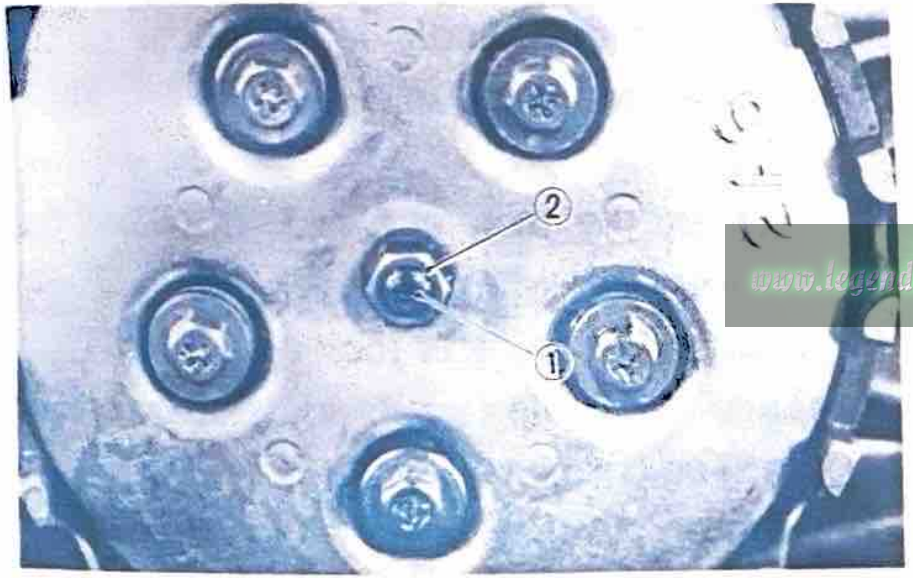
CAUTION:

Never operate the engine with the air filter element removed. This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the filter element will affect carburetor jetting with subsequent poor performance and possible engine overheating.

CLUTCH

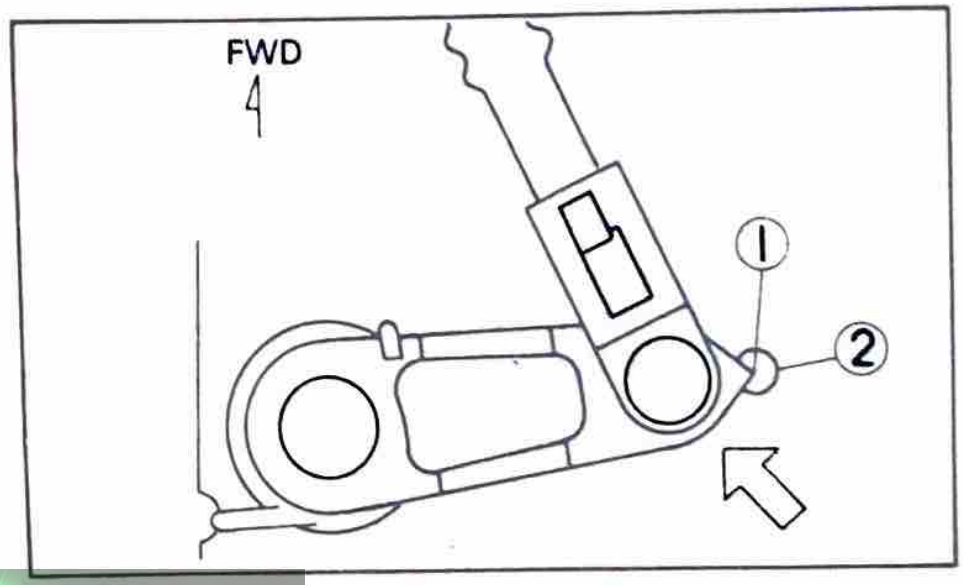
Mechanism adjustment

1. Fully loosen the cable in-line length adjuster lock nut and screw in the adjuster until tight.
2. Turn the handle lever adjuster in.
3. Remove the rear brake adjuster and kick crank, (foot rest (R) – YZ125F only).
4. Drain the transmission oil and remove the crankcase cover (R).
5. Loosen the adjuster lock nut.



1. Adjuster 2. Lock nut

6. Push the bush lever forward with your finger until it stops. With the push lever in this position, turn the adjuster in until the push lever mark and crankcase match mark are aligned.
   Tighten lock nut.

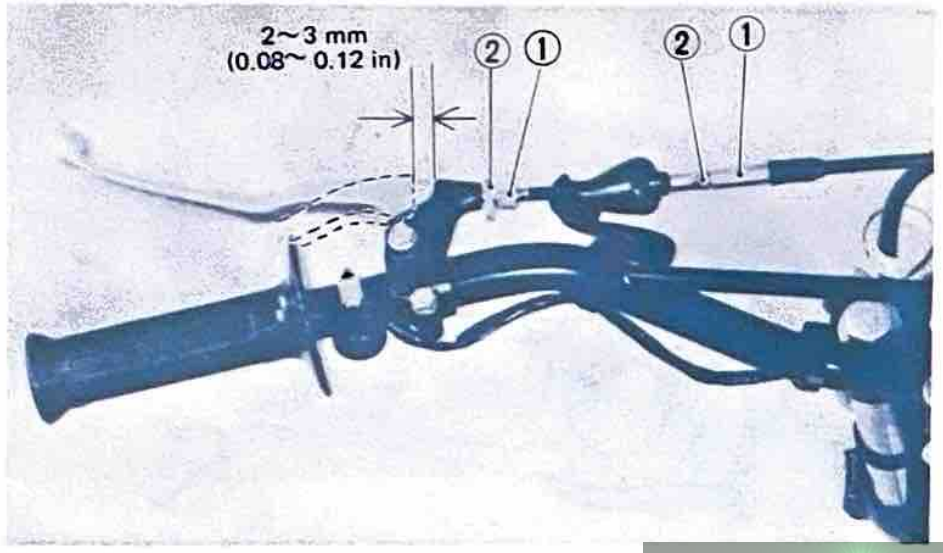


1. Push lever mark 2. Case match mark

7. Install the crankcase cover, kick crank (foot rest (R): YZ125F only) and rear brake adjuster. Re-adjust brake pedal and clutch lever freeplays as required.

Freeplay adjustment

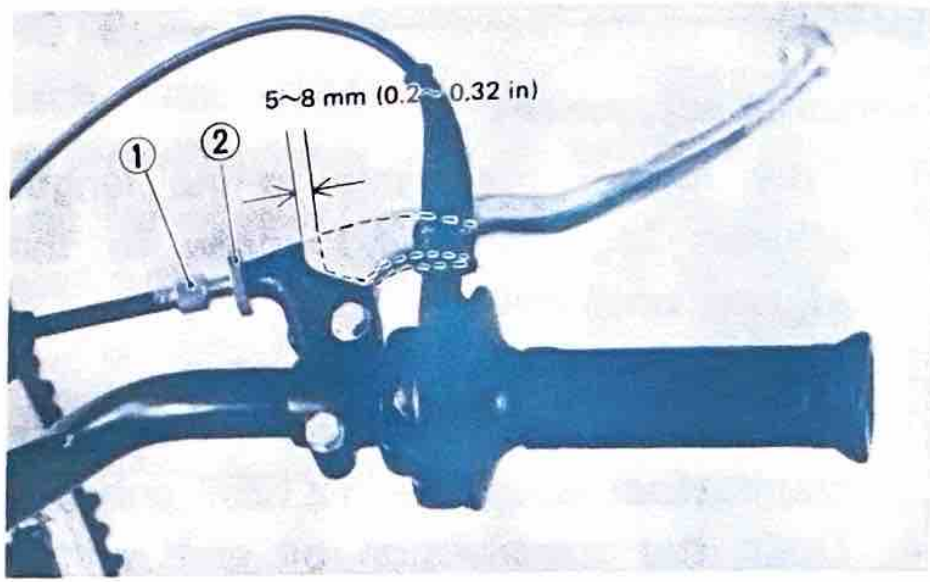
Loosen either the handle lever adjuster lock nut or the cable length adjuster lock nut. Next, fully turn the lever adjuster in and adjust the lever freeplay by turning the cable length adjuster in or out.



1. Adjuster 2. Lock nut

Front brake

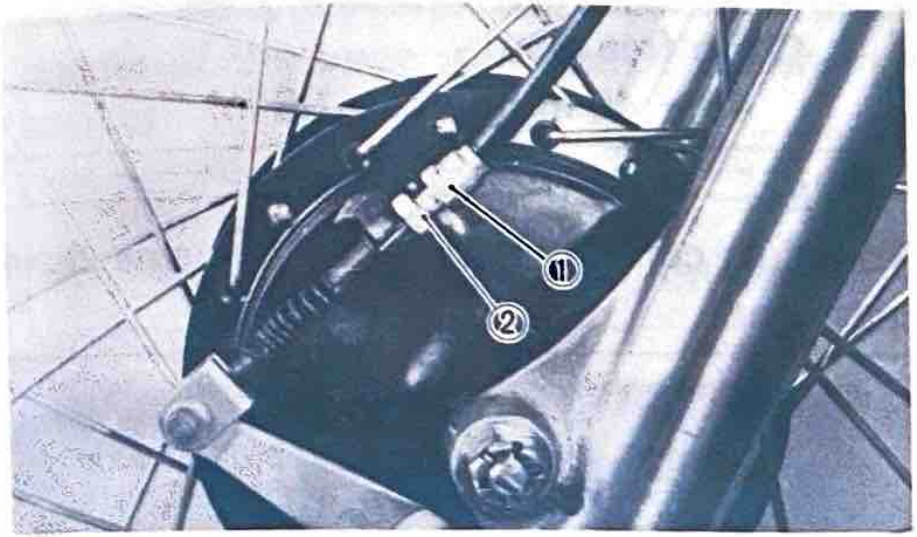
Front brake should be adjusted to suit rider preference with a minimum cable slack of 5 ~ 8 mm (0.2 ~ 0.32 in) play at the brake lever pivot point.



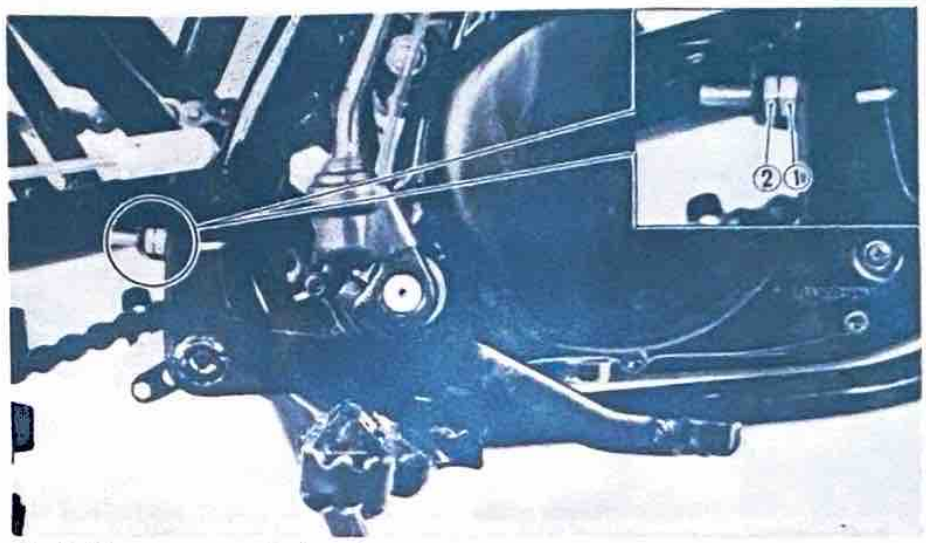
1. Adjuster 2. Lock nut

Adjustment is accomplished at one of two places; either the handle lever holder or the front brake shoe plate.

1. Loosen the lock nut and fully turn the lever holder adjuster in.
2. Loosen the adjuster lock nut.
3. Turn the cable length adjuster in or out until adjustment is suitable.
4. Tighten the lock nut.



1. Adjuster 2. Lock nut



1. Adjuster 2. Lock nut

REAR BRAKE

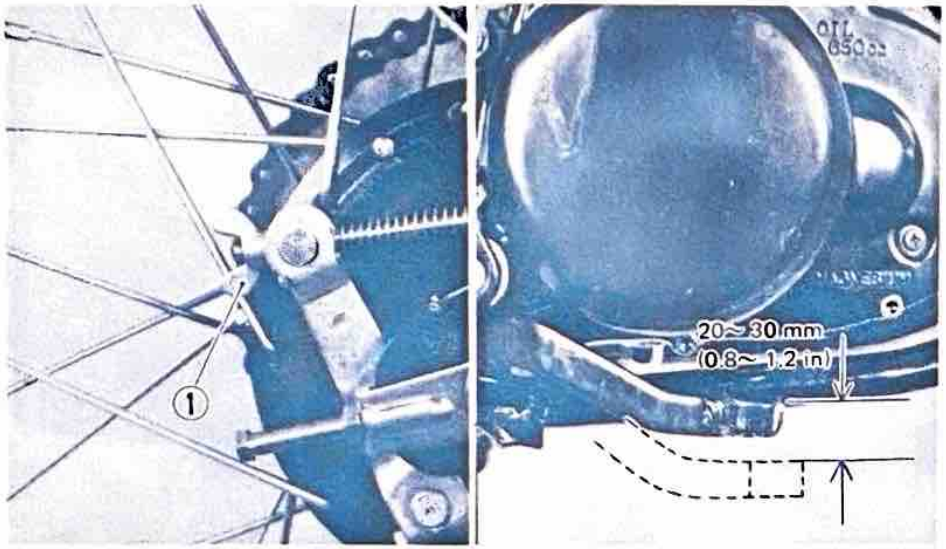
Brake pedal position adjustment

The position of the rear brake pedal should be adjusted so as to suit the rider. Loosen the lock nut and adjust the pedal height by turning the adjuster.

After adjusting, check for correct rear brake play. Do not forget to tighten the lock nut.

Brake pedal freeplay adjustment

Adjust rear brake pedal play to suit, providing a minimum of 20 ~ 30 mm (0.8 ~ 1.2 in) freeplay. Turn the adjusting nut on the rear brake ferrule in or out until brake pedal freeplay is suitable.



1. Adjusting nut

NOTE:

Rear brake pedal adjustment must be checked anytime chain is adjusted or rear wheel is removed and then reinstalled.

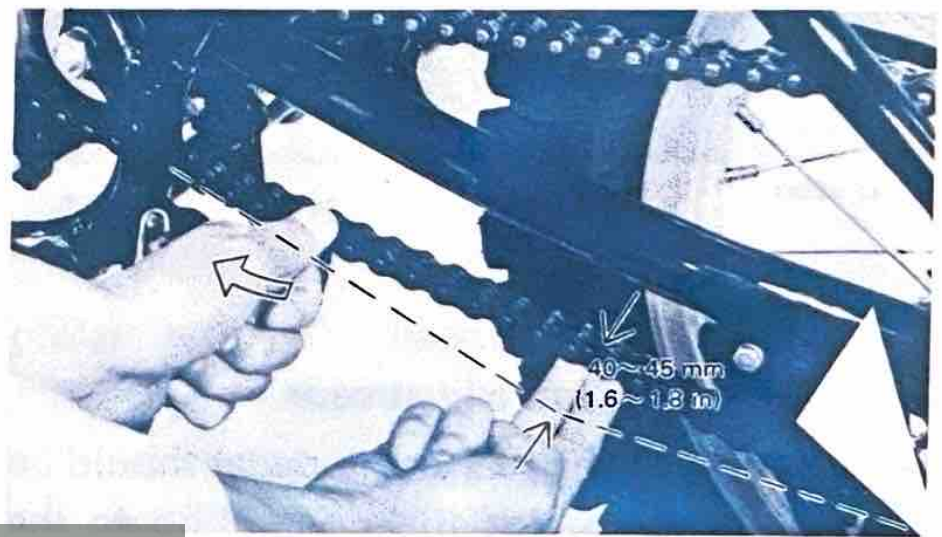
Drive chain (YZ100F)

To check the chain play, both wheels touch the ground and motorcycle stand vertically. Then measure the play in drive chain at the bottom of chain at a point midway between the drive and driven axles.

Chain free play:
40 ~ 45 mm (1.6 ~ 1.8 in)

NOTE:

To adjust correct chain tension, release chain tensioner.



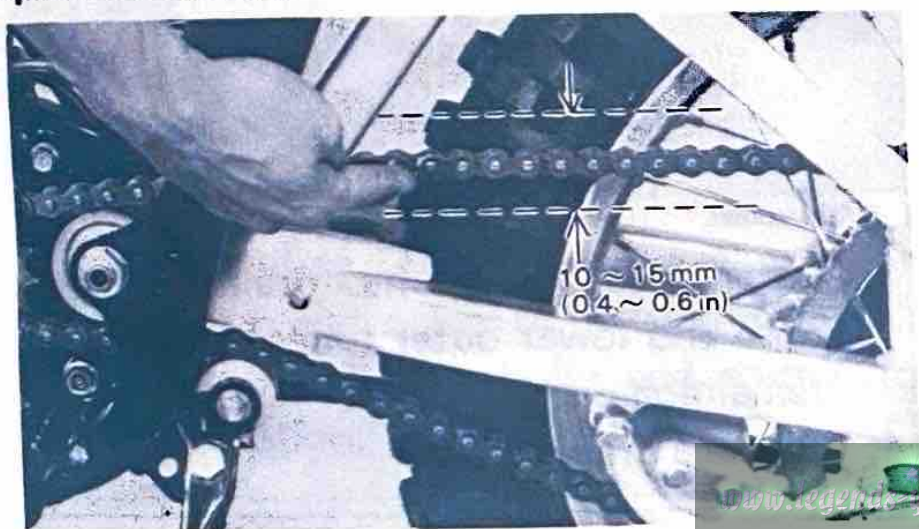
Drive chain (YZ125F)

Place a proper-size wooden box or a stand under the engine to keep the rear wheel raised off the floor.

In this state, measure the chain play in the middle of the upper portion of the chain as follows.

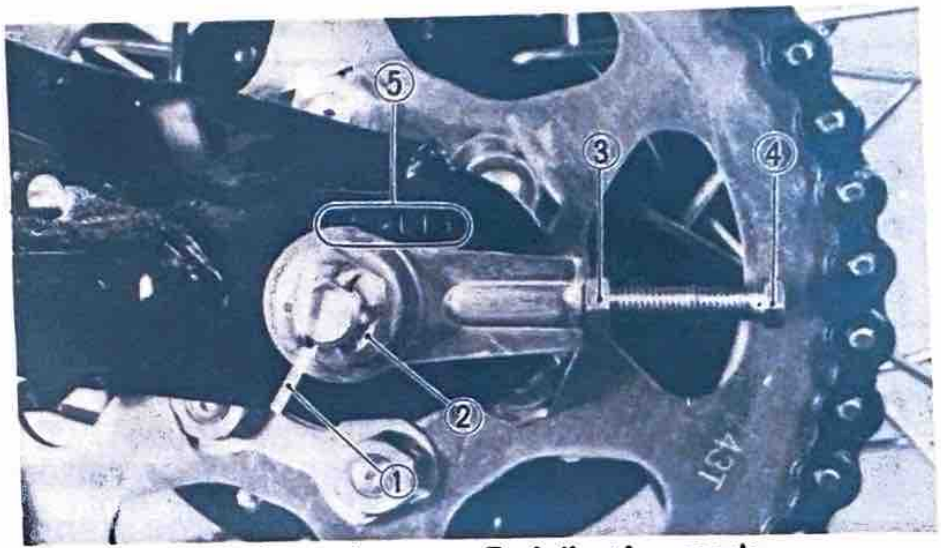
Chain free play:
10 ~ 15 mm (0.4 ~ 0.6 in)

Adjust the chain if the play exceeds the specified value.



To adjust drive chain, proceed as follows:

1. Remove rear axle cotter pin.
2. Loosen axle nut.



1. Cotter pin
2. Axle nut
3. Lock nut
4. Adjuster
5. Adjusting mark

3. Turn adjuster (left and right) until the adjusting marks on chain pullers are aligned with the adjusting marks on each side of the swing arm. In this step, make sure that the adjusting marks are in the same position on both side. Tighten lock nuts.
4. Tighten the rear axle nut.

Torque: 8.5 m-kg (61 ft-lb)

5. Install a new cotter pin.
6. Check brake pedal freeplay.

CAUTION:

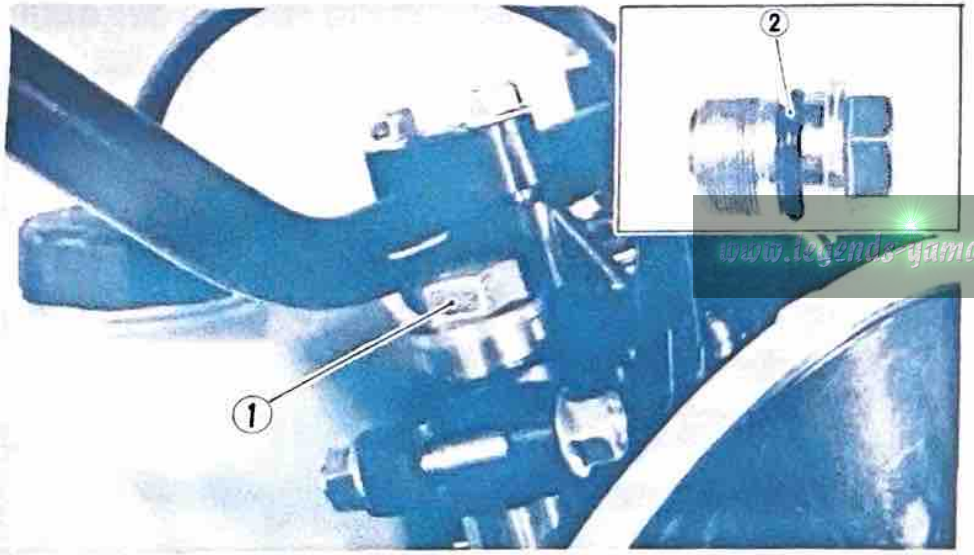
Whenever the chain is adjusted and/or the rear wheel is removed, always check the rear axle alignment and brake pedal free-play.

Front fork oil change (YZ100F)

1. With the front wheel removed or raised off the floor with a suitable frame stand, remove cap bolts on inner fork tubes.

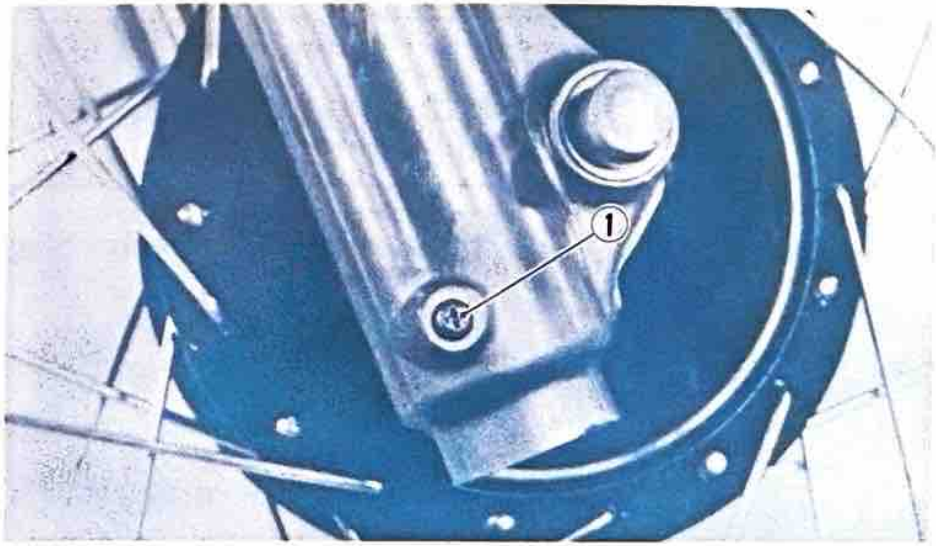
NOTE:

Check O-rings, replace if damaged.



1. Cap bolt 2. O-ring

2. Remove drain screw from each outer tube with open container under each drain hole.



1. Drain screw

3. After most of oil has drained, slowly raise and lower outer tubes to pump out remaining oil.
4. Replace drain screws.

NOTE:

Check gaskets, replace if damaged.

5. Measure correct amount of oil and pour into each leg.

Recommended oil:
Yamaha Fork Oil 10 wt, 20 wt

Quantity per leg: 180 cc (6.1 oz)

NOTE:
Select the weight oil that suits local conditions and your preference (lighter for less damping; heavier for more damping.)

6. After filling, slowly pump the outer tubes up and down to distribute the oil.
7. Replace fork cap bolts and torque to specification.

Fork cap bolt torque:
2.0 m-kg (14 ft-lb)

FRONT FORKS (YZ125F)

CAUTION:
To prevent an accidental explosion of air, the following instructions should be observed:
1. **Use only air or nitrogen for filling. Never use any other gas.**
2. **Never subject the front forks to fire or place them in heated a place.**

Fork oil replacement: (YZ125F)

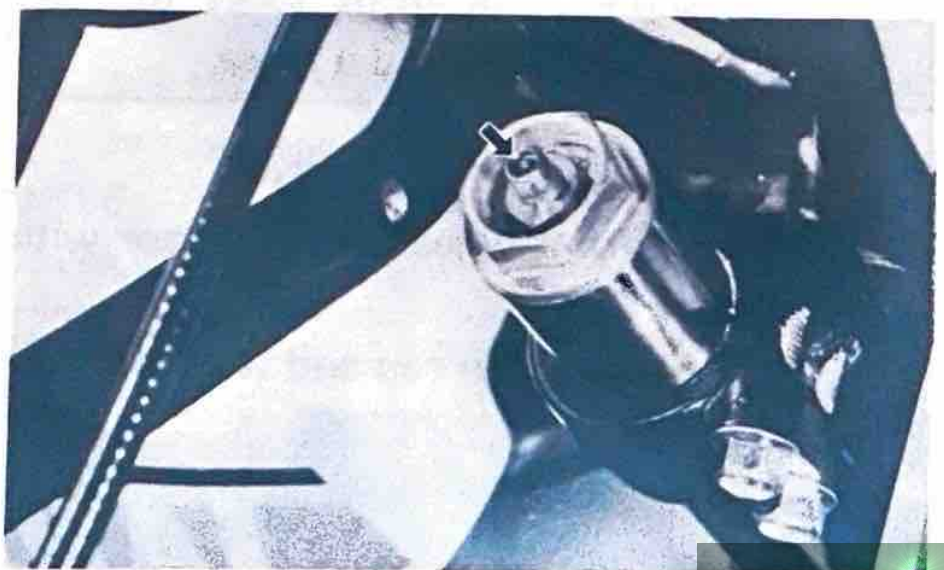
1. Raise the front wheel off the floor with a suitable stand.
2. Remove the rubber cap and valve cap.

1. Valve cap 2. Rubber cap

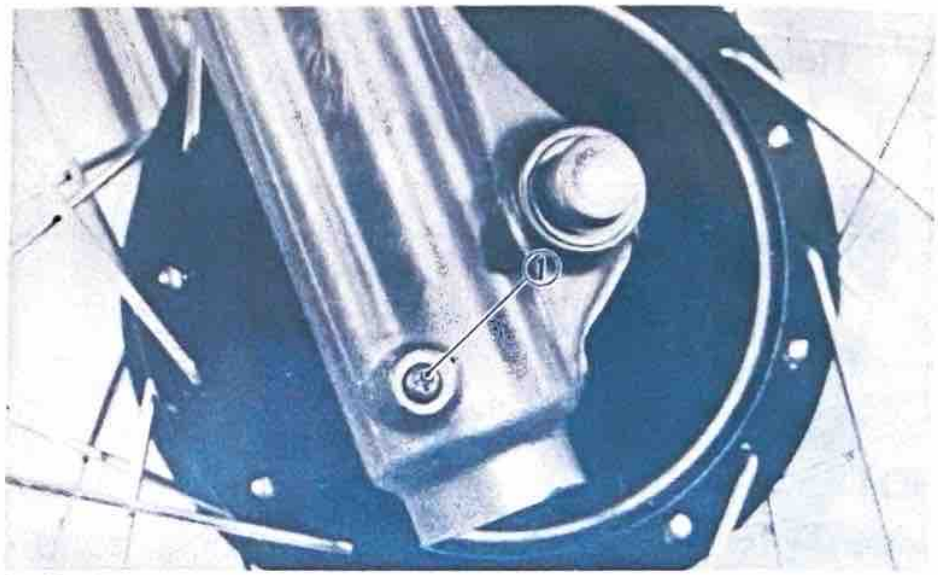
3. Press on the valve to remove all air pressure.

CAUTION:

When the air has to extract it little by little. If not, oil will spurt out together with the air.



4. Remove the cap bolt assembly.
5. Remove drain screw from bottom of fork leg and drain oil.



1. Drain screw

6. When most of oil has drained, slowly raise and lower outer tubes to pump out the remaining oil.
7. Replace drain screws.

NOTE:

Check gasket, replace if damaged.

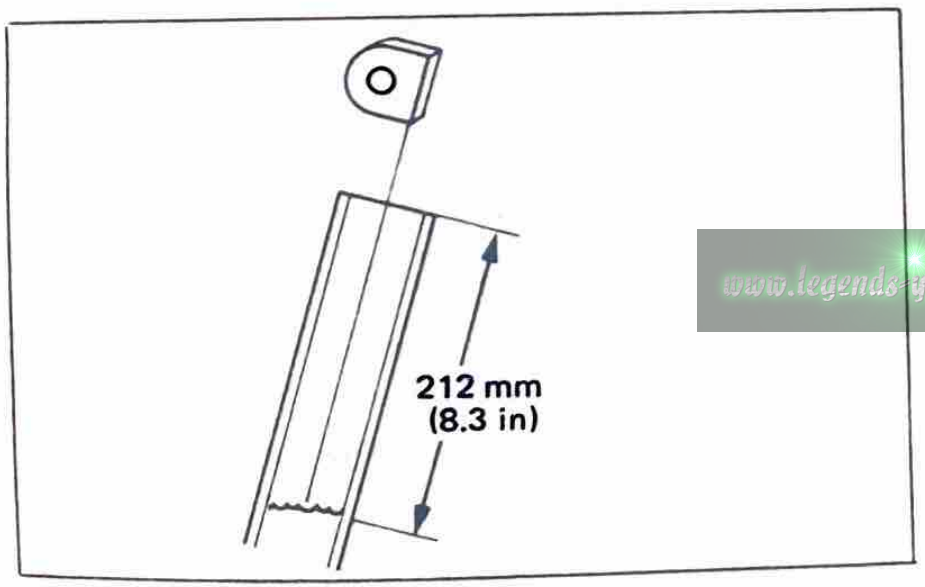
8. Remove the spacer and main spring. And measure correct amount of oil and pour into each leg.

Recommended oil:
Yamaha Fork Oil 10wt, 20wt
Quantity per leg:
301 ± 4 cc (10.2 ± 0.14 oz)

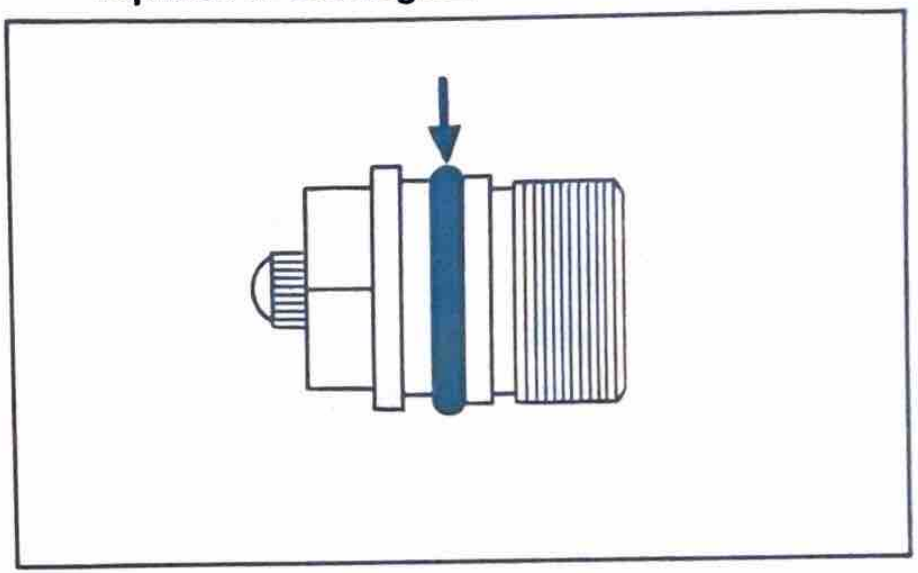
9. After filling with oil, measure the oil level from the inner tube top end with the forks bottomed.
The oil levels must be the same.

Oil level: 212 mm (8.3 in)

Replace main spring and spacer.



10. Inspect the O-ring on cap bolt and replace if damaged.



11. Install cap bolt and torque to specification.

Tightening torque:
2.0 m-kg (14 ft-lb)

12. Install valve cap and rubber cap.

Air pressure adjustment: (YZ125F)

IMPORTANT:

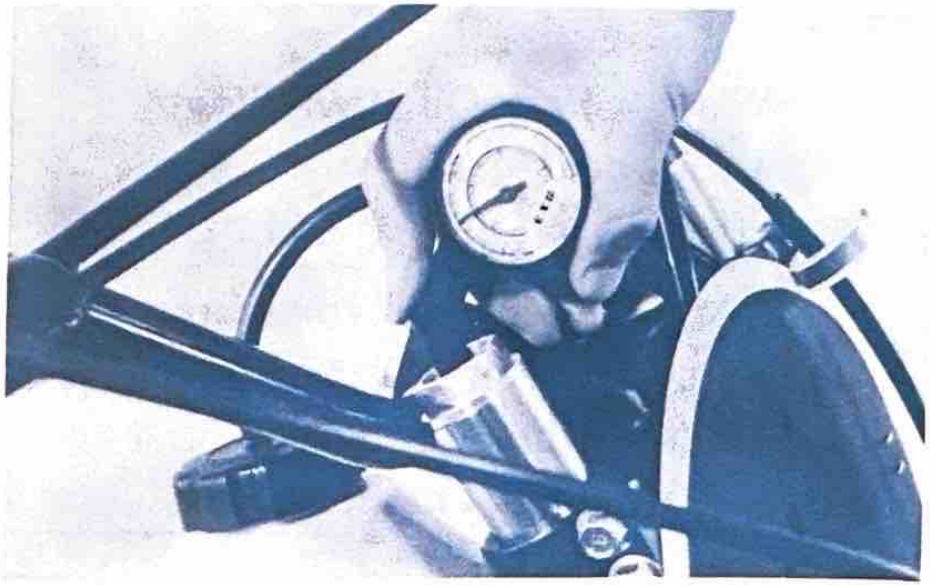
Correct, exact air pressure charging is CRITICAL for proper fork operation.

1. Raise the front forks off the ground by placing a wooden block under the engine. (No weight on front wheel)
2. Remove the rubber cap and valve cap.
3. Fill fork with air or nitrogen gas.

CAUTION:

Never exceed 2.5 kg/cm² (35 psi). Damage to the fork seals will result.

4. Using the air check gauge, adjust the air pressure to specification.



STANDARD AIR PRESSURE:
0.9 kg/cm² (12.8 psi)

NOTE:

Increasing air pressure:
Initial load to increase and cushion becomes hard.

Decreasing air pressure:
Initial load to decrease and cushion becomes soft.

5. The difference between both right and left tubes should be 0.1 kg/cm² (1.4 psi) or less.

NOTE:

The needle indicating 0 on the air gauge may sometimes deflect when the gauge is inserted into oil. In this cause, loosen the screw and shake the gauge several times. Wait until the needle returns to 0 and tighten the screw.

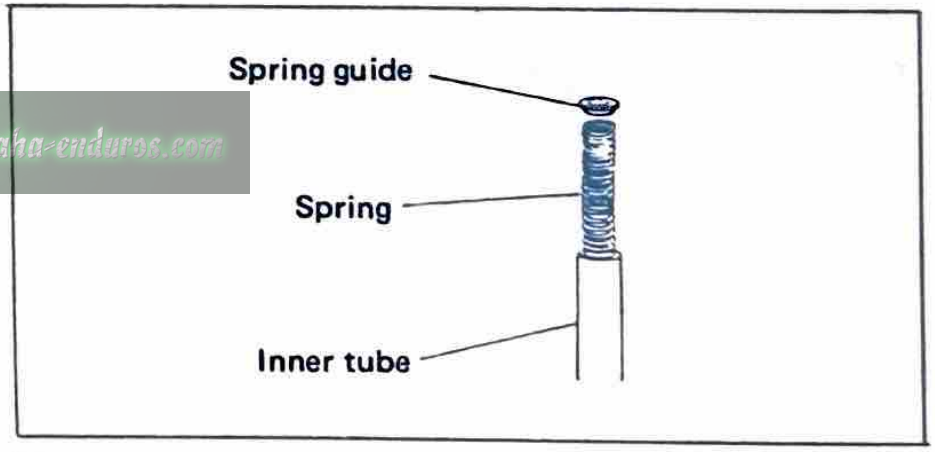
Fork spring replacement: (YZ125F)

In addition to the standard type, two different type fork spring are sold. A proper spring should be selected according to the conditions of a racing course or the weight of the rider.

Type		Part No.	Spring rate kg/mm(lb/in)	I.D. mark
SOFT	Spring	2X3-23141-10	K = 0.223 (12.487)	⬭
	Spacer	1W1-23118-LO	—	L = 80 mm (3.15 in)
STD	Spring	2X3-23141-LO	K = 0.255 (14.280)	⬭
	Spacer	—	—	—
HARD	Spring	2X3-23141-20	K = 0.279 (15.623)	⬭
	Spacer	—	—	—

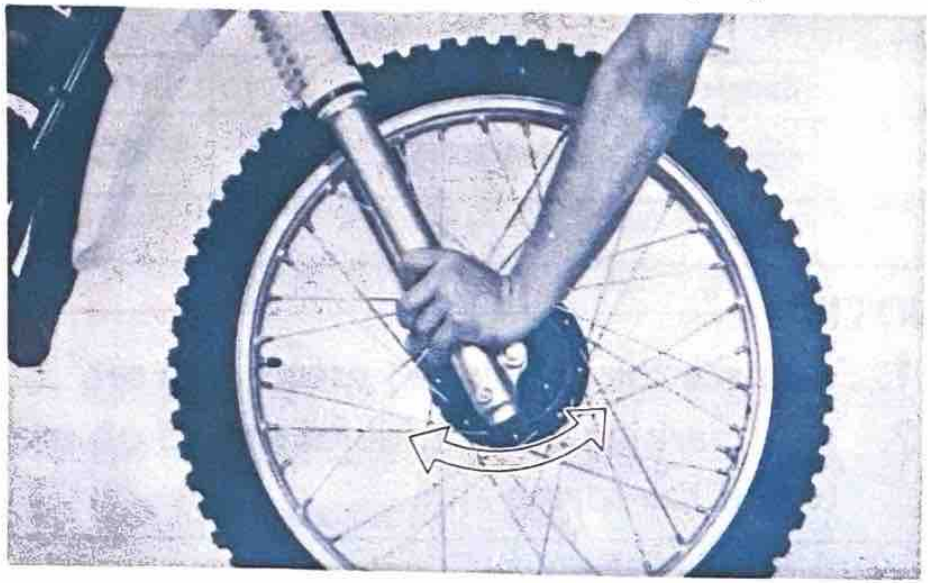
NOTE:

1. Replace the spring and spacer in a set.
2. I.D. marking can be found scored on the top of the spring end.



Steering head adjustment

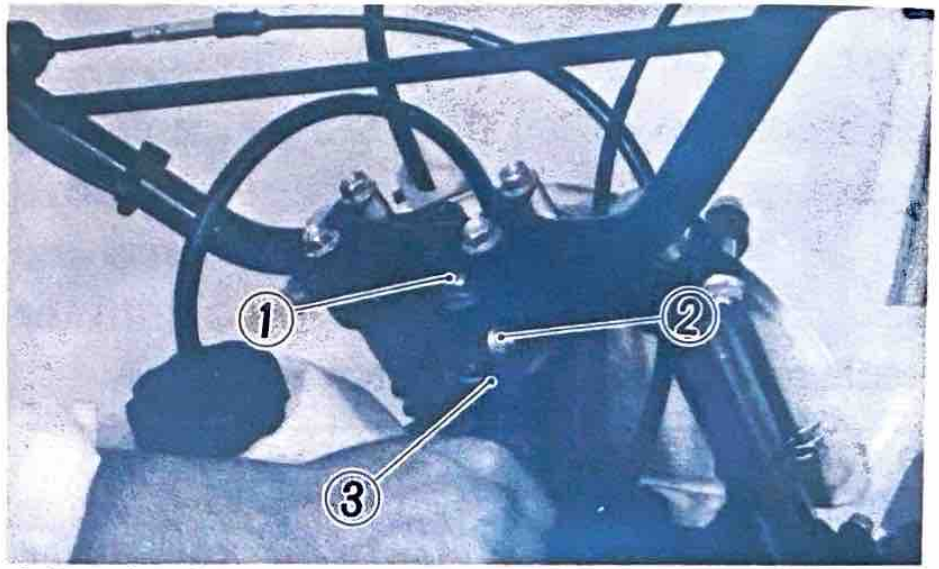
1. With front wheel elevated, grab bottoms of fork legs and gently push and pull to check steering head free play. There should be no noticeable free play.



2. To adjust, first loosen upper stem pinch bolt.
3. Loosen steering fitting bolt.
4. Use steering nut wrench to tighten ring nut. Tighten until free play is eliminated.

NOTE:

Forks must swing from lock to lock without binding or catching.



1. Steering fitting bolt
2. Stem pinch bolt
3. Steering nut wrench

5. Tighten fitting bolt and torque to specification.

Fitting bolt torque:
YZ100F : 5.5 m-kg (40 ft-lb)
YZ125F : 9.5 m-kg (69 ft-lb)

6. Tighten pinch bolt at fork crown and torque to specification.

Stem pinch bolt torque:
2.5 m-kg (18 ft-lb)

REAR SHOCK (MONOCROSS SUSPENSION "DE CARBON" SYSTEM)

WARNING: READ CAREFULLY

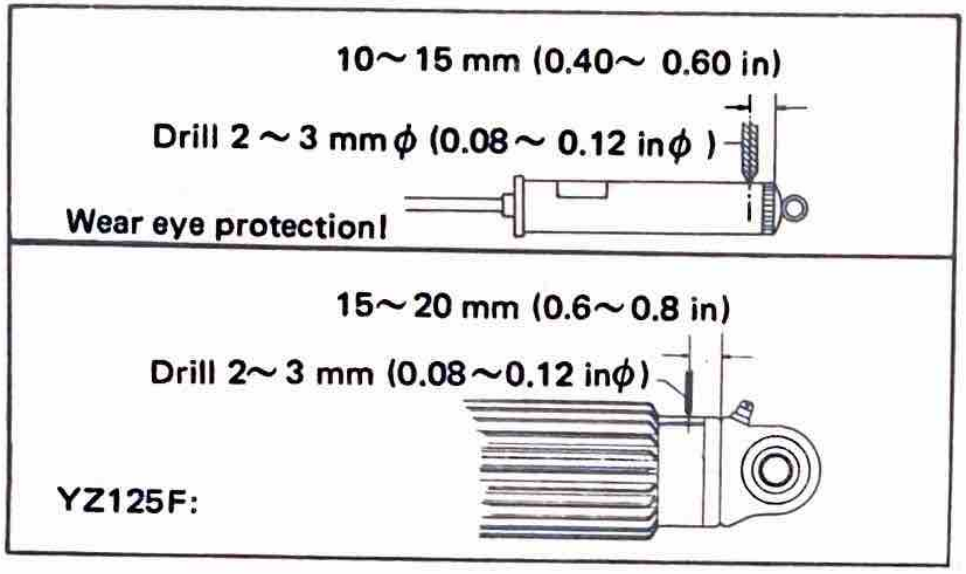
This shock absorber contains highly compressed nitrogen gas.
Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

1. **Do not tamper with or attempt to open the cylinder assembly, Injury may result.**
2. **Do not subject shock absorber to an open frame or other high heat. This may cause the unit to explode due to excessive gas pressure.**
3. **Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.**
4. **Handle it with great care, for a score or scratch in the piston rod sliding portion will cause oil leakage.**
5. **Never remove the plug on the cylinder bottom. Injury may result.**

Notes on disposal (Yamaha dealers only)
Gas pressure must be released before disposal of shock absorber. To do so, drill a 2 ~ 3 mm (0.08 ~ 0.12 in) hole through the cylinder wall at a point 10 ~ 15 mm (0.4 ~ 0.6 in) above the bottom of the cylinder.

CAUTION:

Wear eye protection to prevent eye damage from escaping gas and/or metal chips.



WARNING:

To dispose of a damaged or worn out shock absorber, take the unit to your Yamaha dealer for this disposal procedure.

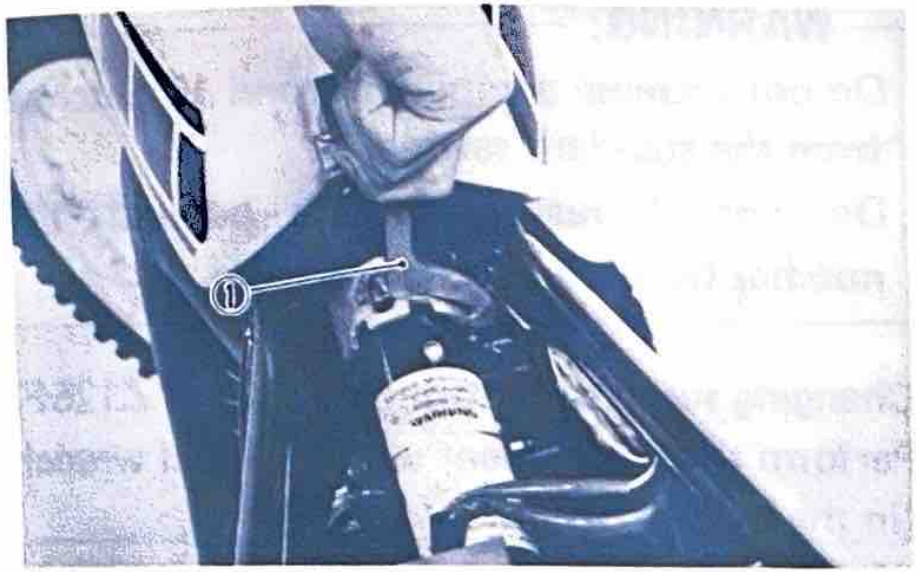
Adjustment (YZ100F)

The spring pre-load of the rear shock absorber can be adjusted to suit rider preference, weight and the course conditions. To adjust, use the ring nut wrench.

- When bottoming feels excessive and too soft; Increase the spring pre-load.
- When spring feels excessive and too hard; Decrease the spring pre-load.
  1. Remove the spring seat stopper.
  2. To increase pre-load, spring seat is raised. To decrease pre-load, spring seat is lowered.

	Soft	STD	Hard				
Adjusting position	1	*	1	2	3	4	5
Turn(s)	1/2	*	1/2	1	1-1/2	2	2-1/2

1. Stiffer
2. Softer
3. Spring seat stopper
4. Spring seat



1. Ring nut wrench

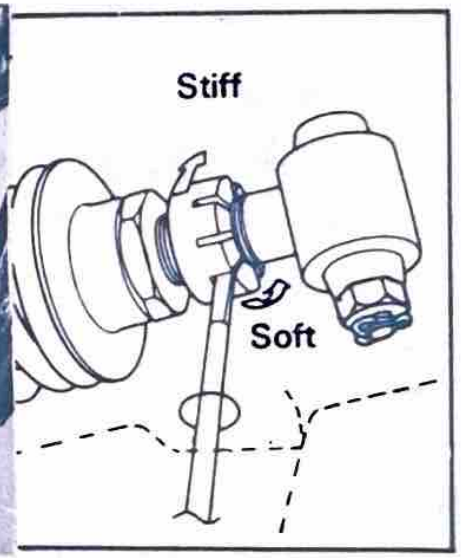
3. Tighten the spring seat stopper.

Adjustment: (YZ125F)

- When bottoming feels excessive and too soft:
  1. Increase the spring pre-load
  2. Make damping performance stiffer
- When springing feels excessive and too hard:
  1. Decrease the spring pre-load
  2. Make damping performance softer

Changing damping performance: (YZ125F)

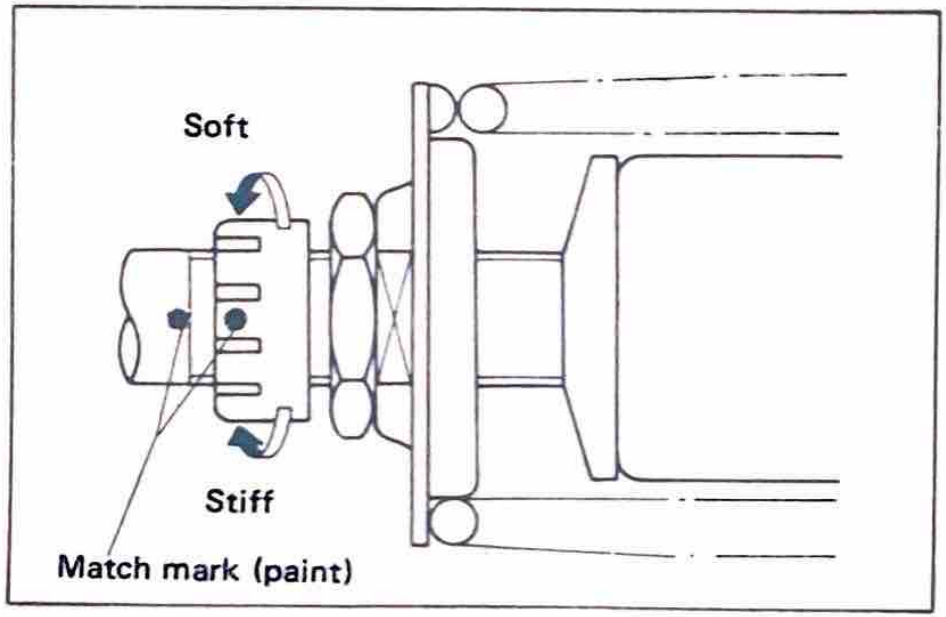
Adjustment can be made without removing the shock absorber. Turn the adjusting nut with a slotted head screw driver through the hole provided one each on either side of the frame.



* To make it stiffer, screw IN the adjuster.

* To make it softer, screw OUT the adjuster.

Make notch by notch adjustment and test it by riding after each adjustment.



NOTE:

Turn the adjuster until it clicks. Maximum (Minimum) extent can be known by the position where turning suddenly feels heavy (light). Do not give any more turns.

WARNING:

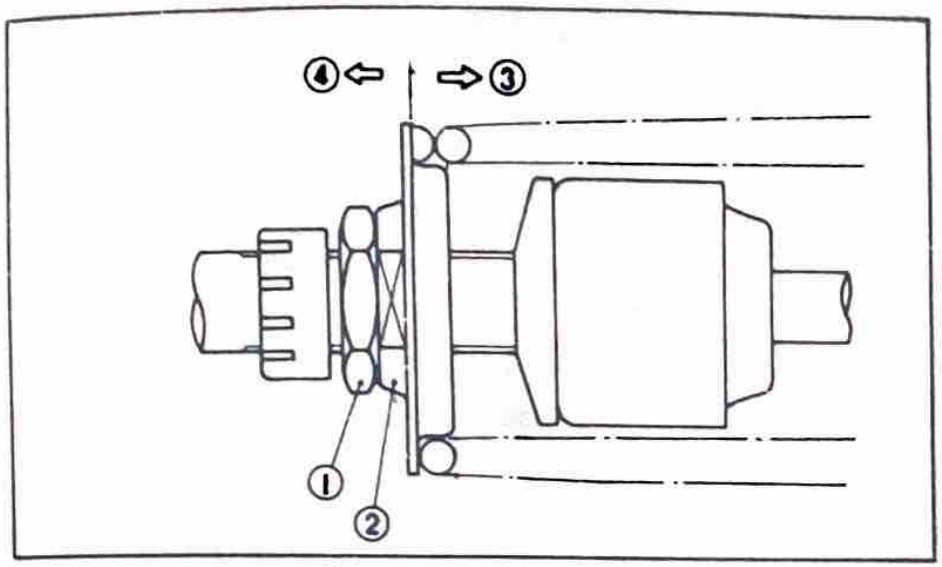
Do not increase damping beyond 10 notches from the standard setting.

Do not decrease damping beyond 11 notches from the standard setting.

Changing suspension spring preload:(YZ125F)

Perform this adjustment with a special wrench (in the owner's tool).

1. Remove the shock absorber.
2. Loosen the adjuster lock nut.
3. To increase fitting load, screw IN the adjuster.
   To decrease fitting load, screw OUT the adjuster.



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

NOTE:

Initial fitting length is set for 295 mm (11.61 in). Adjustable extent is maximum 302 mm (11.89 in) and minimum 291 mm (11.46 in). Be sure to adjust within the above limits.

4. Tighten the lock nut by retaining the adjuster at turning position.

Tightening torque:
6.0 m-kg (43 ft-lb)

Gas pressure: (YZ125F)

The gas pressure can be adjusted. For this adjustment, take the unit to your Authorized Yamaha dealer.

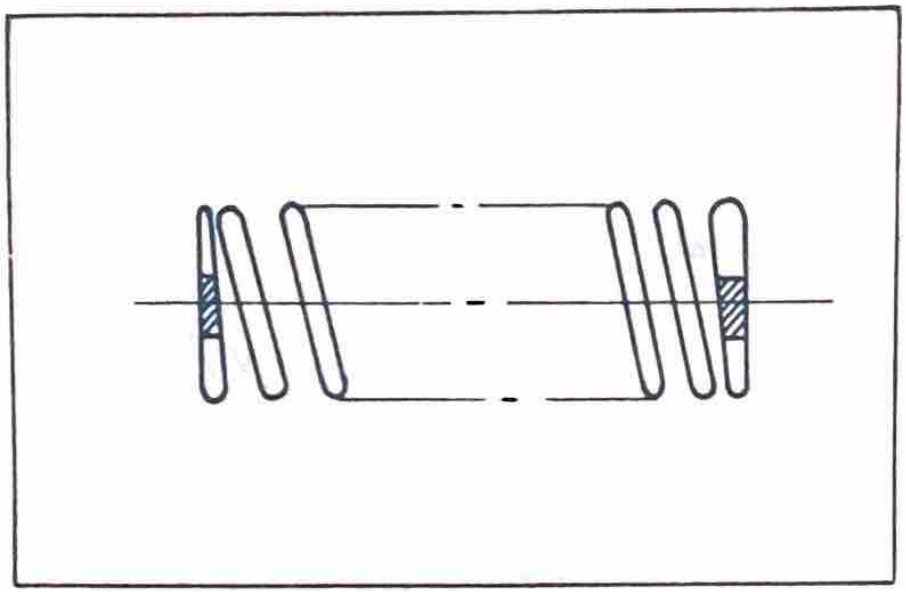
Rear shock spring replacement: (YZ125F)

In addition to the standard type, two different type rear shock springs are sold. A proper type should be selected according to the conditions of a racing course or the weight of the rider.

Type	Part No.	Spring rate kg/mm (lb/in)	Color code
SOFT	90501-98478	K1 = 1.91 (107.0) K2 = 4.02 (225.1)	White/ Yellow
STD	90501-98466	K1 = 2.17 (121.5) K2 = 3.75 (210.0)	Pink
HARD	90501-98477	K1 = 2.72 (152.3) K2 = 4.03 (225.7)	White/ Red

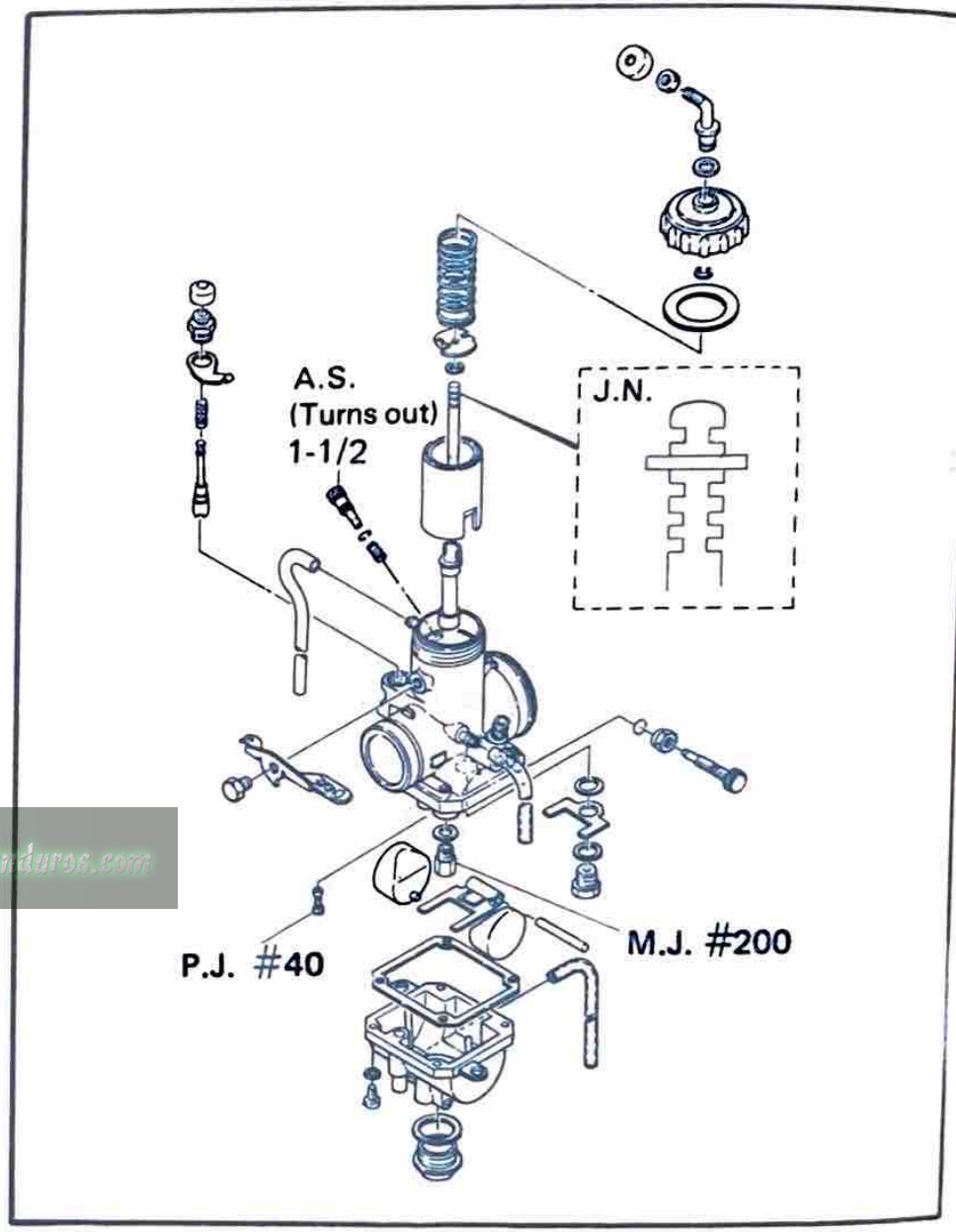
NOTE:

Code color is shown on the end of the spring.

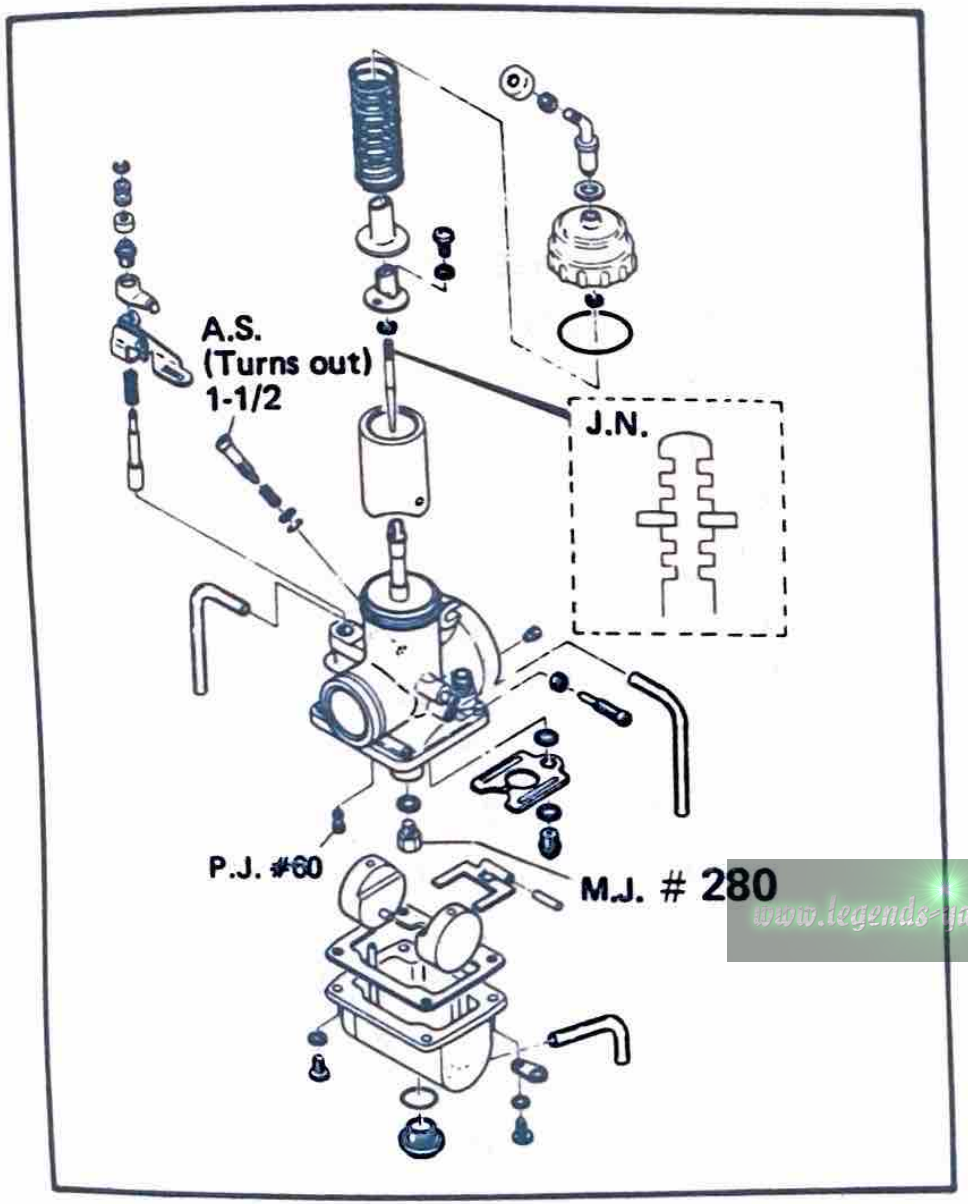


MINOR REPAIR

CARBURETOR (YZ100F)

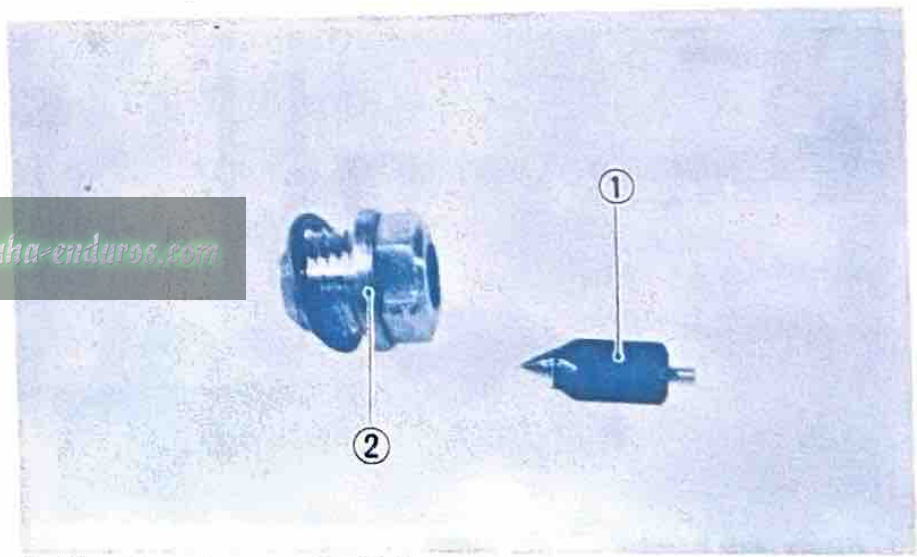


CARBURETOR (YZ125F)



Inspection

1. Examine carburetor body and fuel passages. If contaminated, wash carburetor in petroleum based solvent. Do not use caustic carburetor cleaning solutions. Blow out all passages and jets with compressed air.
2. Examine condition of floats. If floats are leaking or damaged, they should be replaced.
3. Inspect inlet needle valve and seat for wear or contamination. Replace these components as a set.



1. Needle valve 2. Valve seat

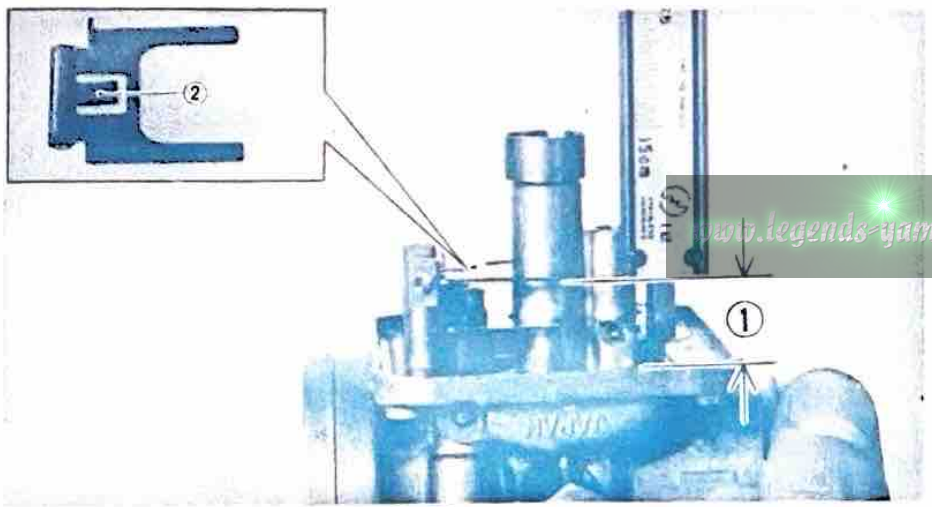
Adjustments

1. Float arm height

a. Checking

Using a vernier caliper, measure the float height from the top of the float to the float chamber gasket seat (gasket removed).

Float arm height:
YZ100F: 16.4 mm (0.646 in)
Level with carburetor base
YZ125F: 23.5 mm (0.925 in)
Level with carburetor base



1. Float arm height 2. Tang

b. Adjustment

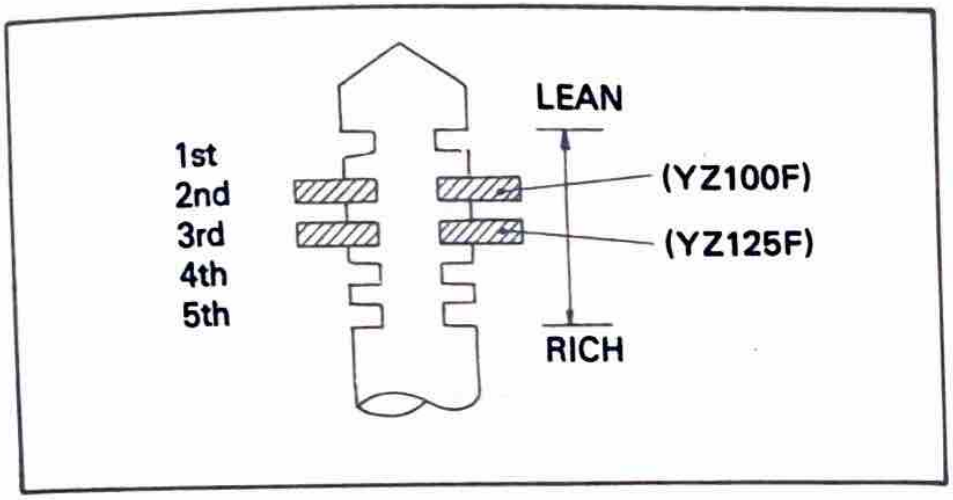
CAUTION:
Check the needle valve and valve seat for wear before adjustment.

Make the adjustment by bending the tang on the float arm.

2. Jet needle

The mid-range air/fuel supply is affected by the position of the needle in the needle jet. If it is necessary to alter the mid-range air/fuel mixture characteristics of the machine, the jet needle position may be changed. Move the jet needle up for a leaner condition or toward the bottom position for a richer condition.

YZ100F	Jet needle type:	6DP10-2
	Clip position:	No. 2 Groove
YZ125F	Jet neelde type:	6F22-3
	Clip position:	No. 3 Groove



Troubleshooting

A motocross machine requires immediate, predictable throttle response over a wide operating range. Cylinder porting, combustion chamber compression, ignition timing, muffler design, and carburetor size and component selection are all balanced to achieve this goal. However, variations in temperature, humidity and altitude will affect carburetion and consequently, engine performance.

The following list gives each of the major components of the carburetor that can be readily changed in order to modify performance if required. If you are unfamiliar with carburetor theory, we suggest you refrain from making changes. Quite often, a performance problem is caused by another related component, such as the exhaust system, ignition timing or combustion chamber compression.

NOTE:

See MECHANICAL ADJUSTMENTS for additional carburetor adjustments.

Pilot air screw:

Controls the ratio of air-to-fuel in the idle circuit. Turning the screw in decreases the air supply, giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THIS ADJUSTMENT: ZERO TO 1/8 THROTTLE.

Pilot jet:

Controls the fuel flow in the idle circuit. Changing the jet to one with a higher number supplies more fuel to the circuit giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THIS JET: ZERO TO 1/8 THROTTLE.

Throttle valve (slide):

The throttle valve (slide) has a portion of the base cut away to control air flowing over the main nozzle. A wider angle (more "cutaway") will create a leaner mixture. Throttle valves are numbered according to the angle of the cutaway. The higher the number, the more cutaway, the leaner the mixture.

OPERATING RANGE MOST AFFECTED BY THE THROTTLE VALVE: 1/8 to 1/4 (+) THROTTLE.

Jet needle:

The jet needle is fitted within the throttle valve. The tapered end of the needle fits into the main nozzle outlet. Raising the needle allows more fuel to flow out of the needle. Moving the needle clip from the first, or top groove, through the fifth, or bottom groove, will give a correspondingly richer mixture.

OPERATING RANGE MOST AFFECTED BY THE JET NEEDLE: 1/4 to 3/4 (+) THROTTLE.

Main jet:

The main jet controls overall fuel flow through the main nozzle. Changing the jet to one with a higher number supplies more fuel to the main nozzle giving a richer mixture.

OPERATING RANGE MOST AFFECTED BY THE MAIN JET: 3/4 TO FULL THROTTLE.

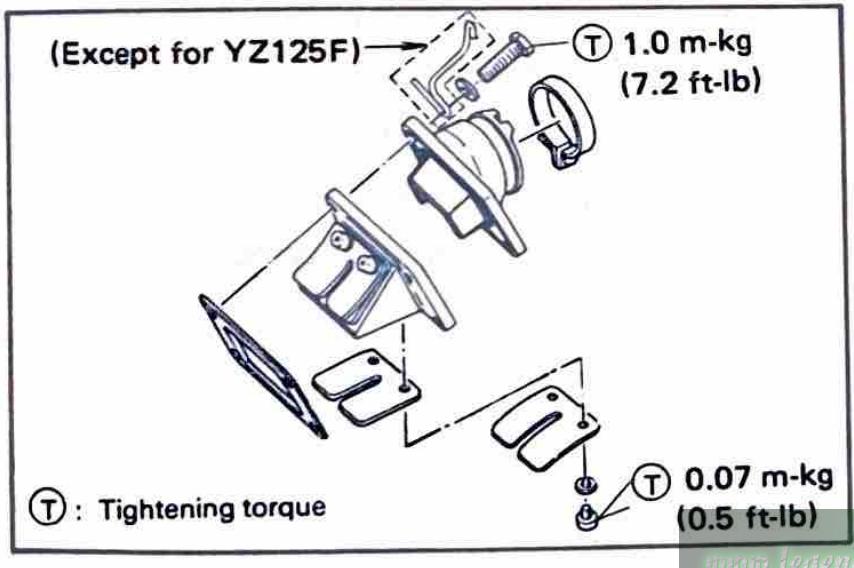
NOTE:

Excessive changes in main jet size can affect performance at all throttle positions.

CAUTION:

The fuel/air mixture ratio is a governing factor upon engine operating temperature. Any carburetor changes, whatsoever, must be followed by a thorough spark plug test.

Reed valve

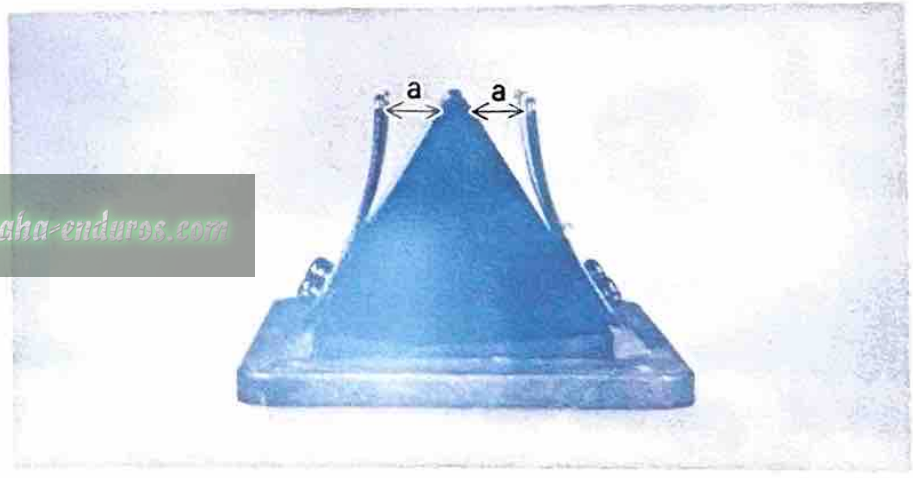


Inspection

1. Inspect rubber intake manifold for signs of weathering, checking or other deterioration.
2. Inspect reed petals for signs of fatigue and cracks. Reed petals should fit flush or nearly flush against neoprene seats. If in doubt as to sealing ability, apply suction to carburetor side of assembly. Leakage should be slight to moderate.
3. The valve stopper controls the movement of the valve. Check clearance "a".

Standard value "a":
8.1 ~ 8.5 mm (0.32 ~ 0.33 in)

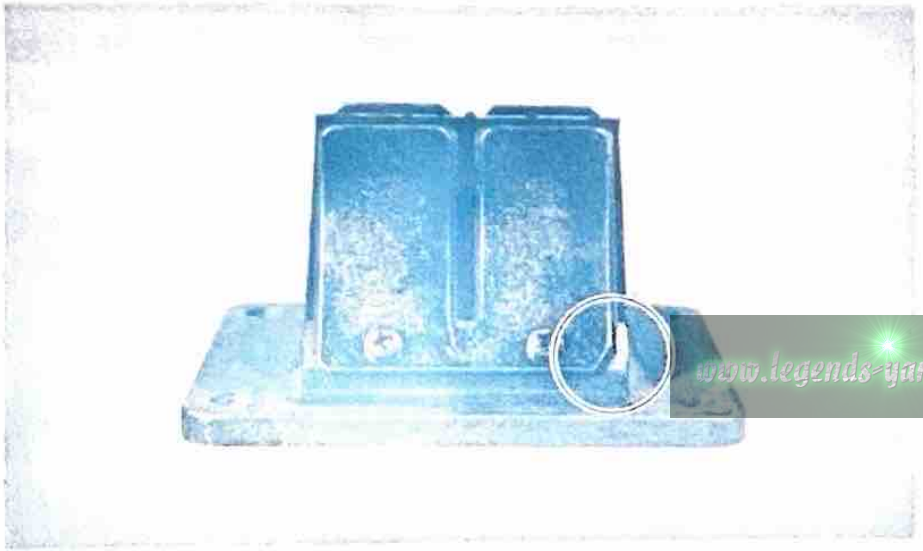
If it is 0.5 mm (0.020 in) more or less than specified, replace the valve stopper.



4. Check reed valve for bending. If beyond tolerance, replace reed valve.

Reed valve bending limit: 0.3 mm (0.012 in)

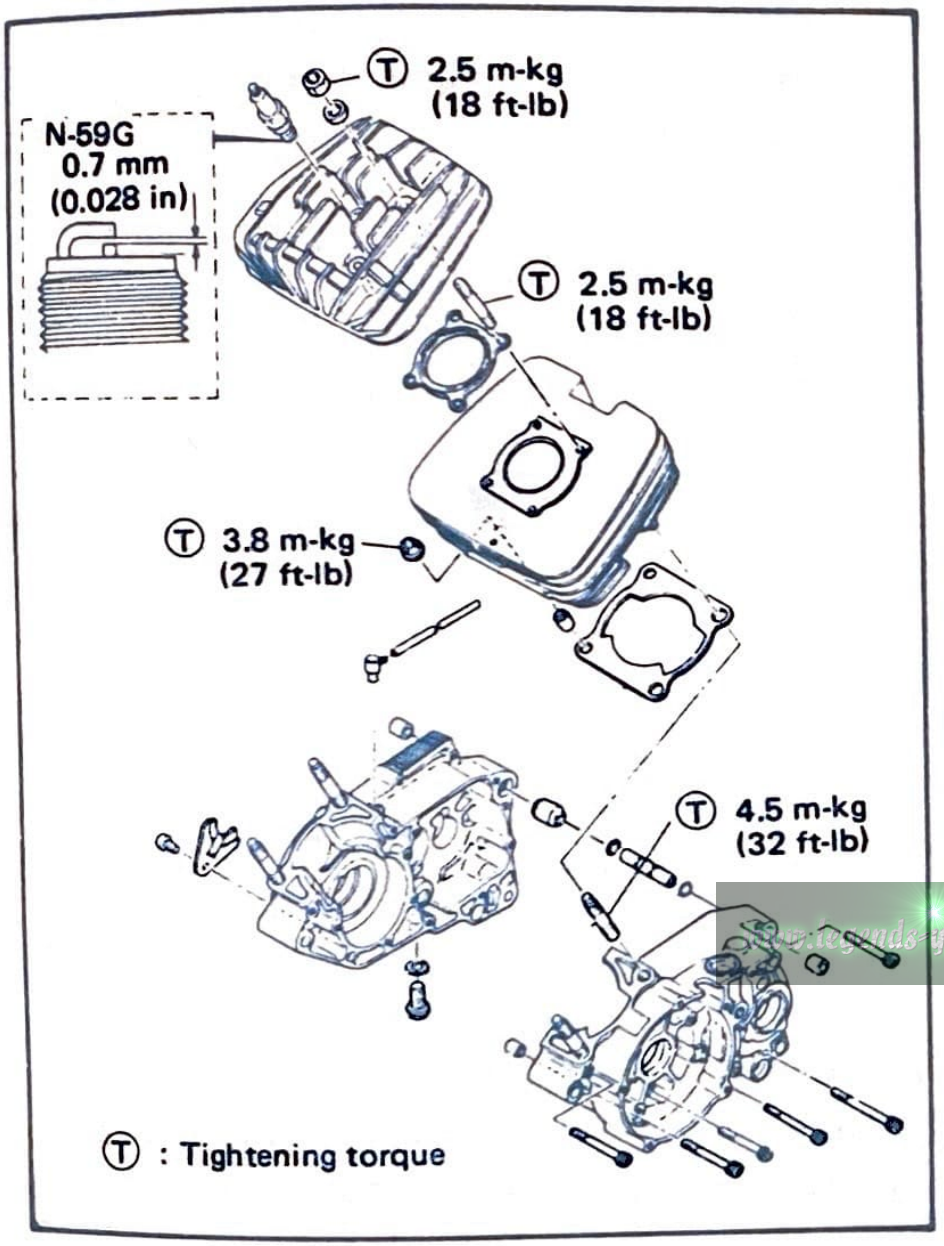
5. During reassembly, note the cut in the lower corner of the reed and stopper plate. Use as aid to direction of reed installation.



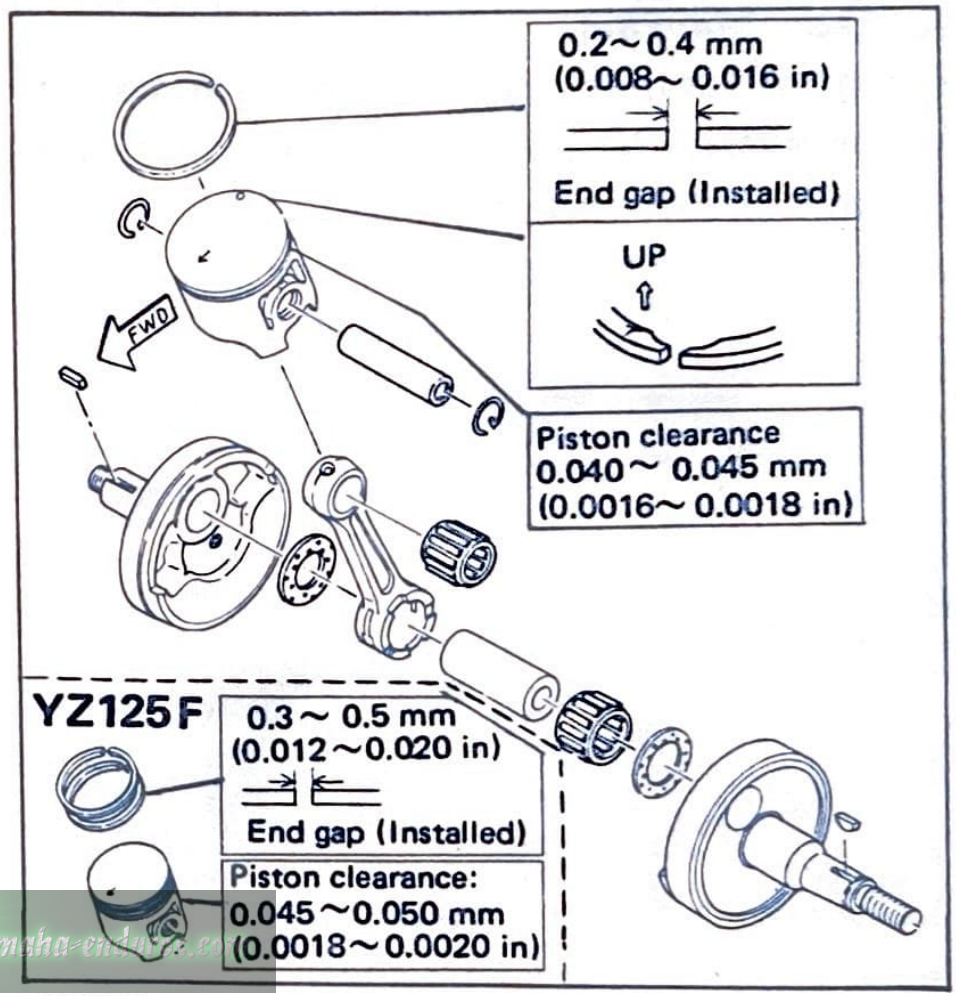
Top end and muffler

1. Remove the two bolts and remove seat.
2. Remove the tank fitting band and securing bolt from fuel tank.
3. Turn the fuel petcock to "OFF" position and disconnect the fuel pipe. Remove tank.
4. Remove coil spring at muffler to cylinder joint and remove muffler, and silencer.
5. Remove the clutch wire at handle lever first and then at clutch push lever.
6. Remove spark plug lead wire.

CYLINDER HEAD AND CYLINDER



PISTON



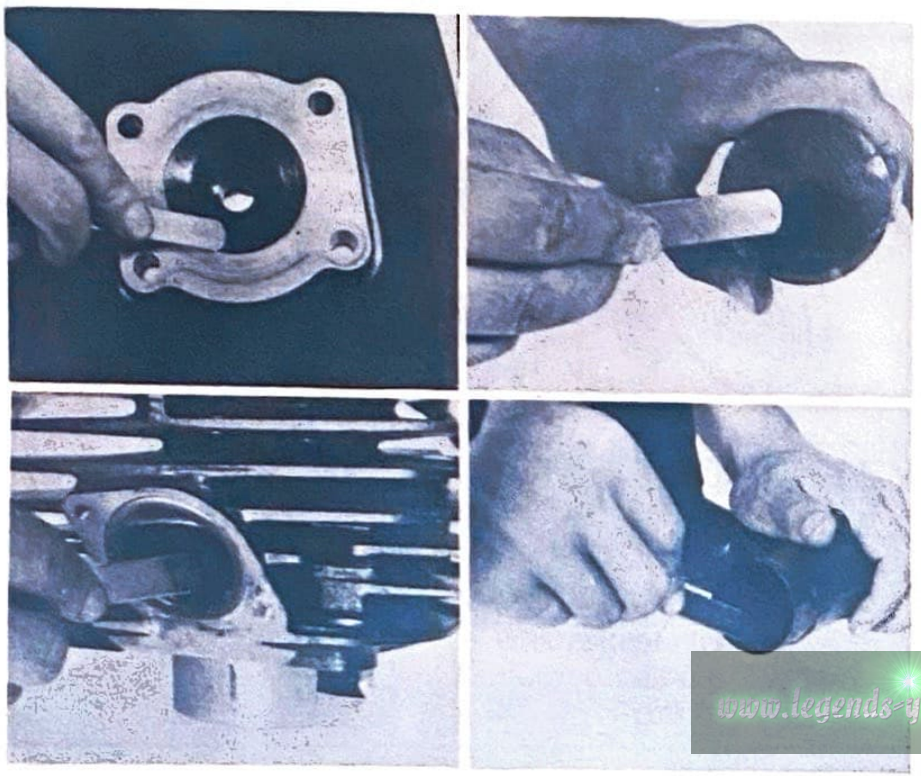
NOTE:

Stuff a clean shop rag into crankcase cavity, around rod, to prevent dirt and other foreign particles from entering.

MAINTENANCE

A. Decarbonizing

Using a rounded scraper, remove carbon deposits from the combustion chamber, piston crown, exhaust port and silencer.

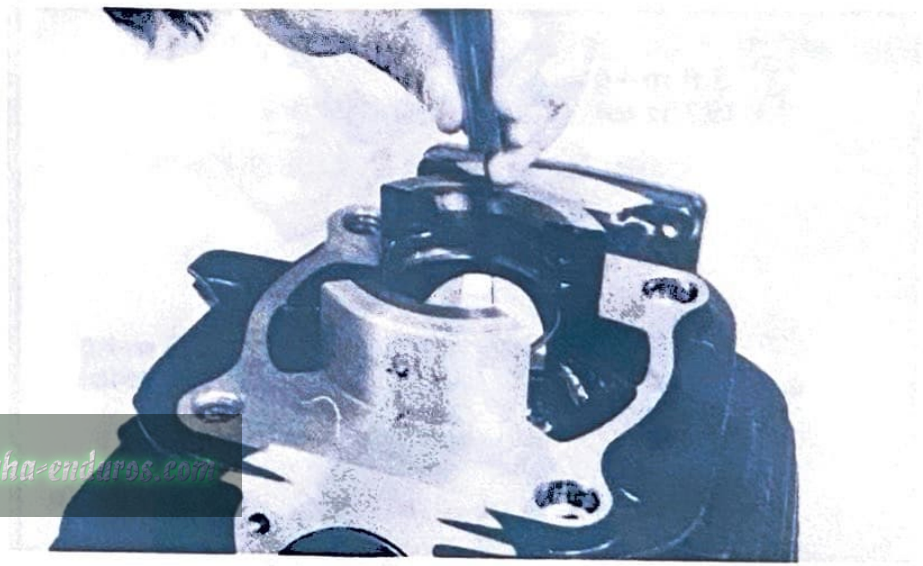


B. Inspection

1. Ring end gap

   Insert ring into cylinder. Push down approximately 20 mm (0.79 in) using piston crown to maintain right angle to bore. Measure installed end gap. If beyond tolerance, replace ring.

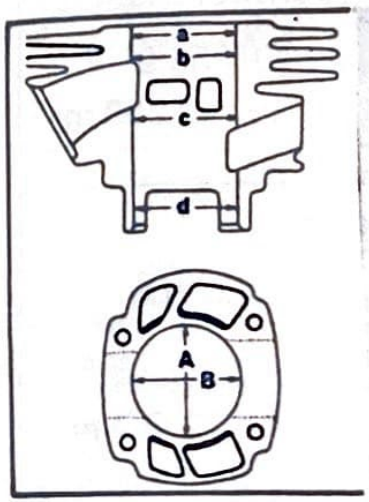
Ring end gap, installed:	
YZ100F	0.2~0.4 mm (0.008~0.016 in)
YZ125F	0.3~0.5 mm (0.012~0.020 in)

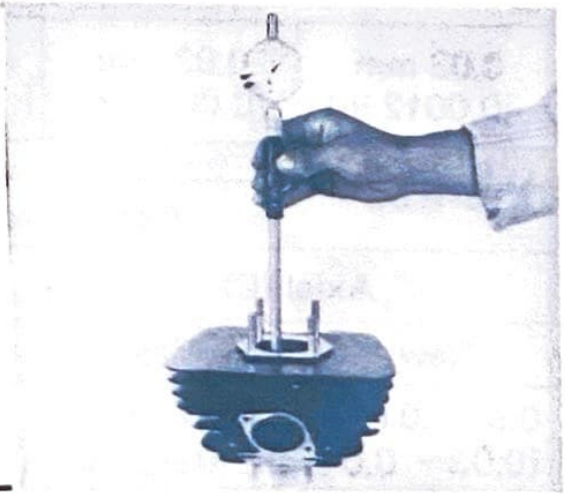


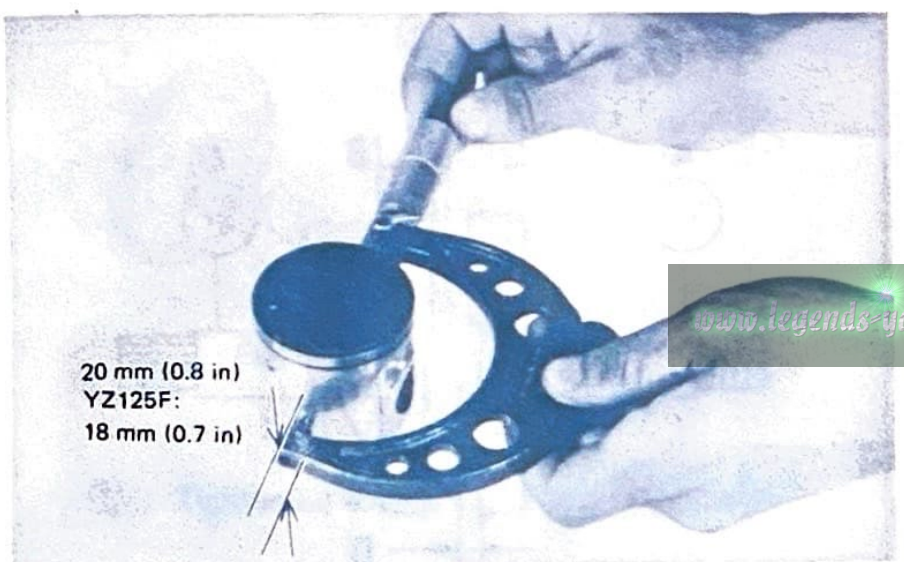
Cylinder bore measurement

Measure front-to-rear, side-to-side at top, center and bottom just above exhaust port.

If over tolerance and not correctable by honing rebore to next over-size.







Piston O.D. measurement (YZ100F)

To measure a cutaway piston, measure across the skirts at a height of 20 mm (0.8 in) from bottom of piston skirts.

Piston diameter = Partial measurement + 0.020 mm (0.0008 in)
Nominal piston clearance: 0.040 ~ 0.045 mm (0.0016 ~ 0.0018 in)
Maximum wear limit: 0.1 mm (0.0039 in)

Piston O.D. measurement (YZ125F)

To measure a piston, measure across the skirts at a height of 18 mm (0.7 in) from bottom of piston skirts.

(YZ100F, YZ125F)

Piston clearance = Minimum cylinder dia. − Maximum piston dia.
Nominal piston clearance: 0.045~ 0.050 mm (0.0018~ 0.0020 in)
Maximum wear limit: 0.1 mm (0.0039 in)

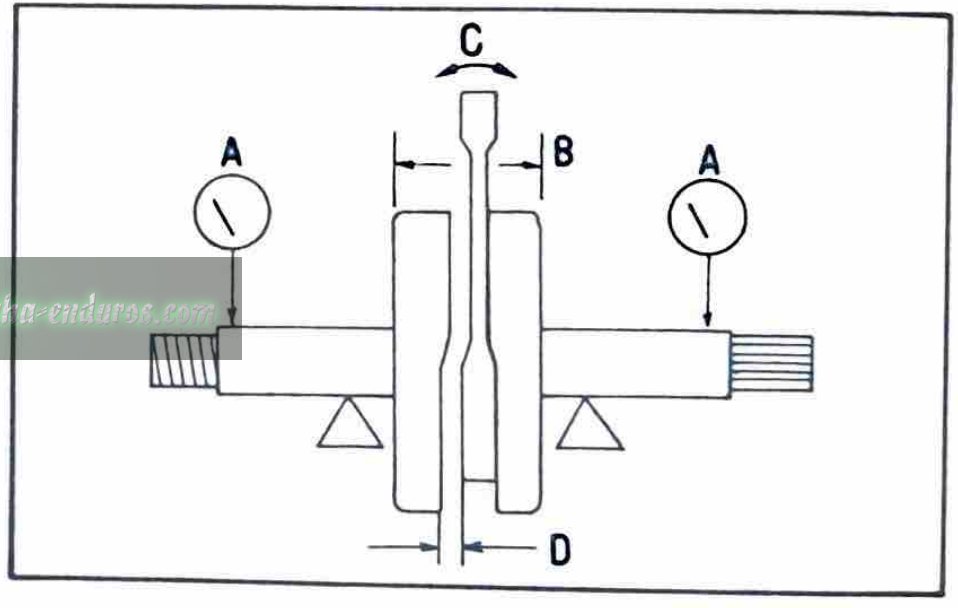
Piston pin, bearing

1. Check the pin for signs of wear. If any wear is evident, replace pin and bearing.
2. Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.
3. Check the bearing cage for excessive wear. Check the rollers for signs of flat spots. If found, replace pin and bearing.

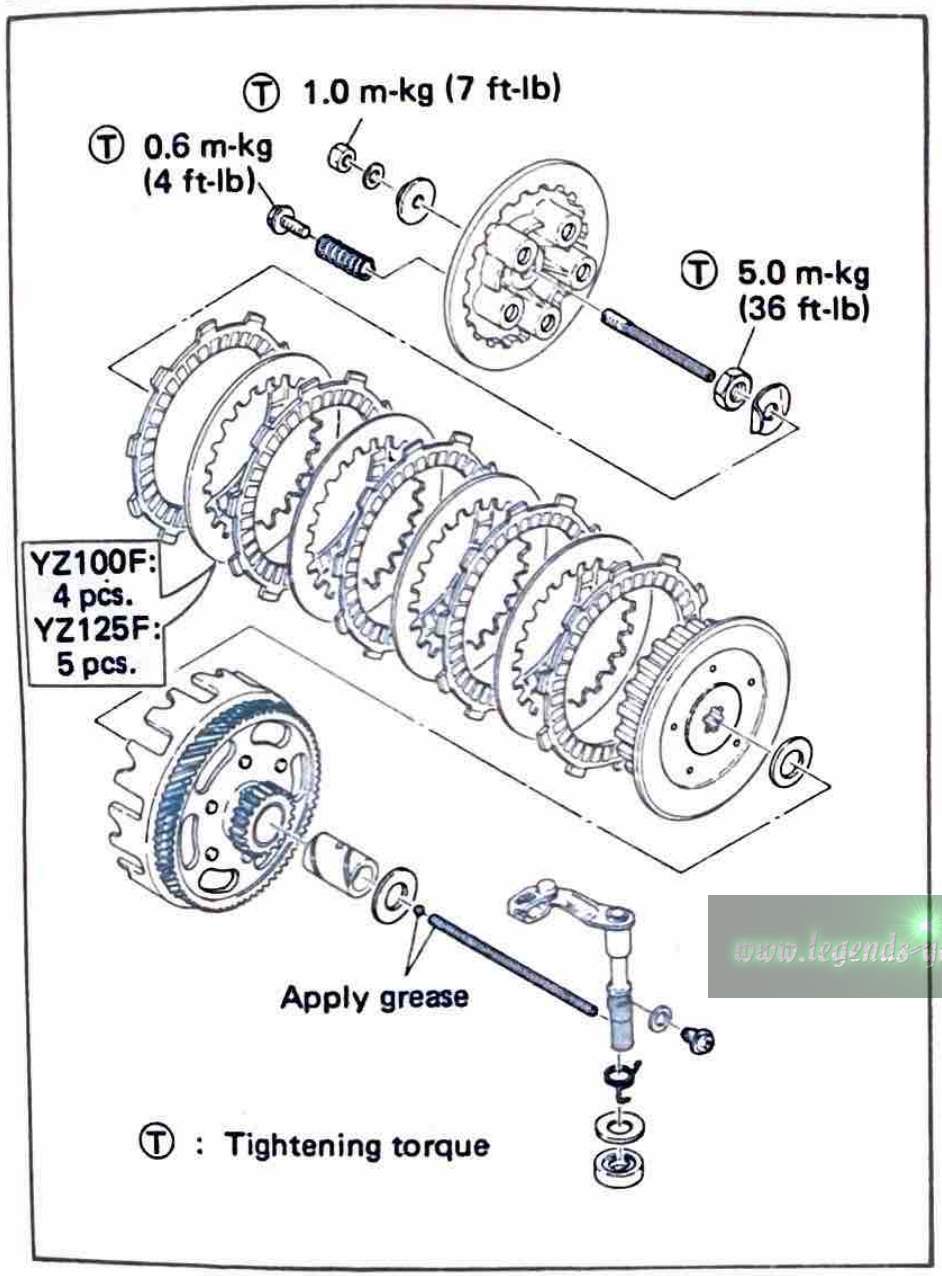
Crankshaft specifications

Deflection tolerance (A)		Flywheel width (B)
0.03 mm (0.0012 in)	0.03 mm (0.0012 in)	55.90~55.95 mm (2.201~2.203 in)

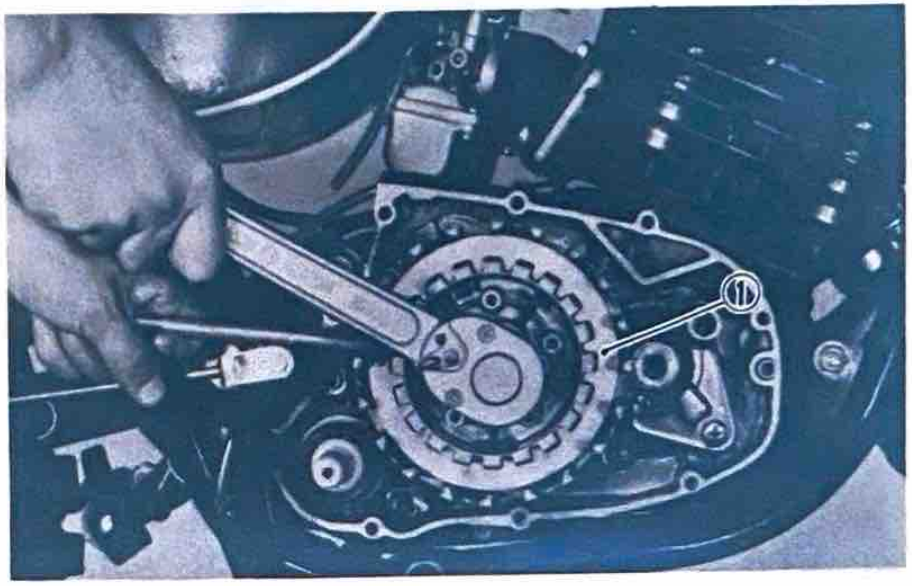
Rod clearance			
Axial (C)		Side (D)	
New	Max.	Min.	Max.
0.8~1.0 mm (0.03~ 0.04 in)	2.0 mm (0.08 in)	0.2 mm (0.008 in)	0.7 mm (0.028 in)



CLUTCH



Using the clutch holding tool, remove the clutch securing nut and lock washer.

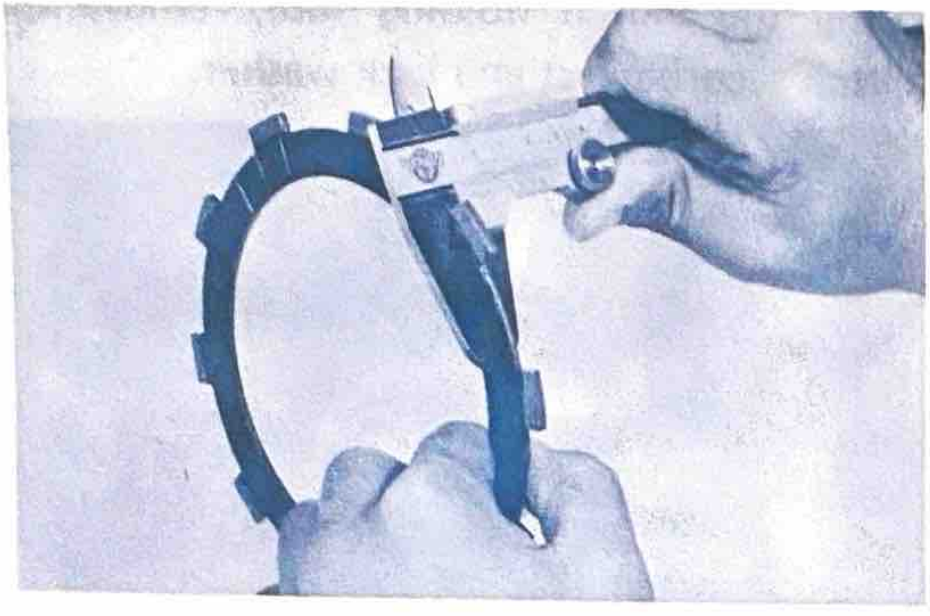


1. Clutch holding tool

Troubleshooting

1. Measure the friction plates at three or four points. If their minimum thickness exceeds tolerance, replace all plates.

	New	Wear limit
Friction plate thickness	3.0 mm (0.12 in)	2.7 mm (0.11 in)



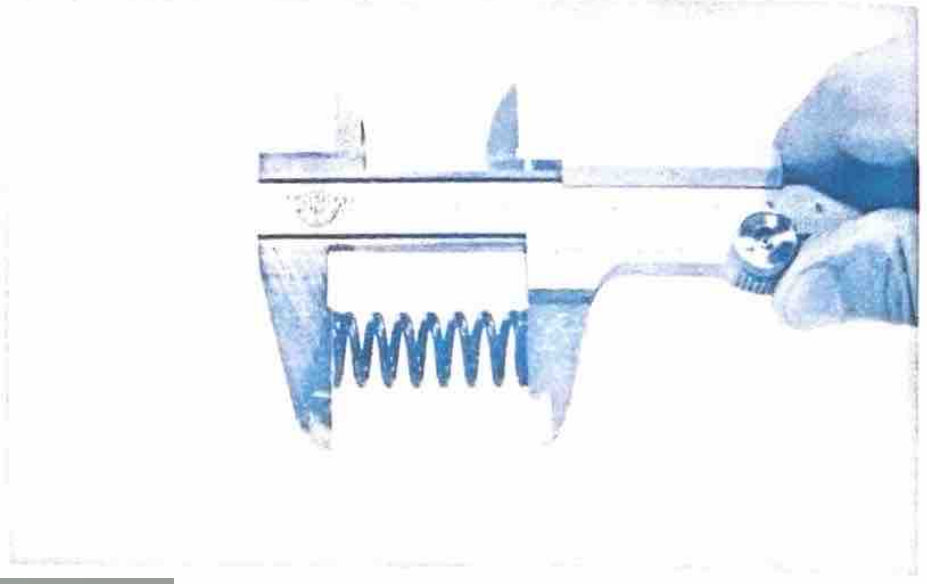
2. Check the plates for signs of warpage and heat damage, replace as required.

NOTE:

For optimum performance, if any plate requires replacement, it is advisable to replace the entire set.

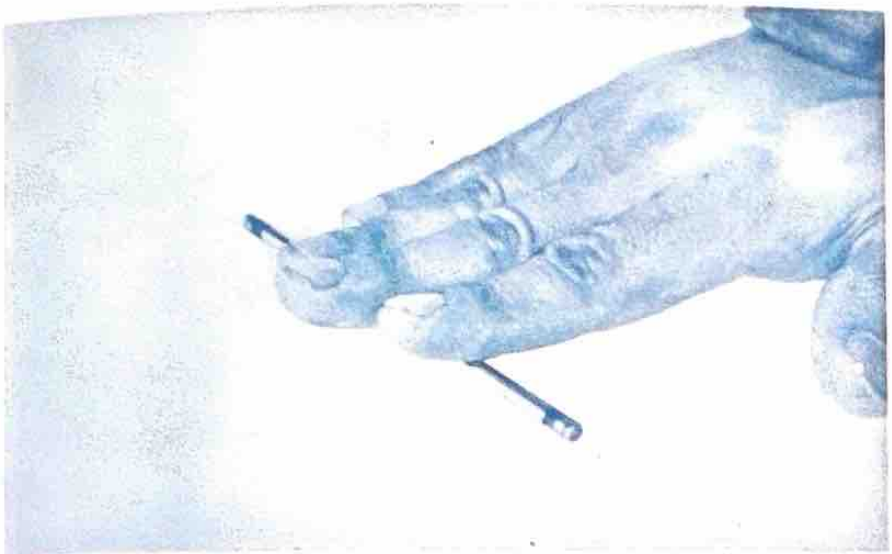
3. Measure each clutch spring. If beyond tolerance, replace.

		New	Minimum
Clutch spring free length	YZ100F	36 mm (1.42 in)	35 mm (1.38 in)
	YZ125F	34 mm (1.34 in)	33 mm (1.30 in)



4. Roll the push rod across a surface plate. If rod is bent, replace.

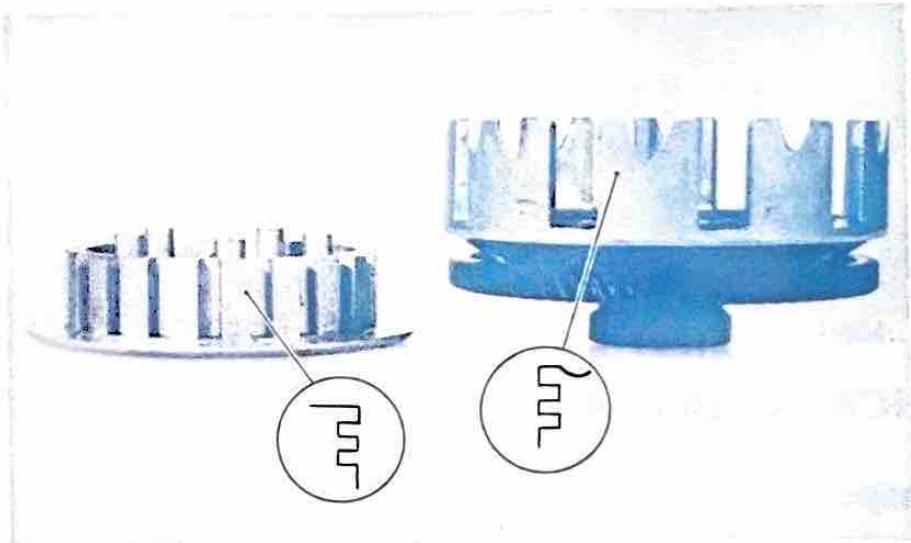
Bend limit: 0.15 mm (0.006 in)



5. Check the bushing and spacer for signs of galling, heat damage, etc. If severe, replaces as required.
6. Check dogs on driven gear (clutch housing). Look for cracks and signs of galling on edges. If moderate, deburr. If severe, replace.
7. Check splines on clutch boss for signs of galling. If moderate, deburr. If severe, replace.

NOTE:

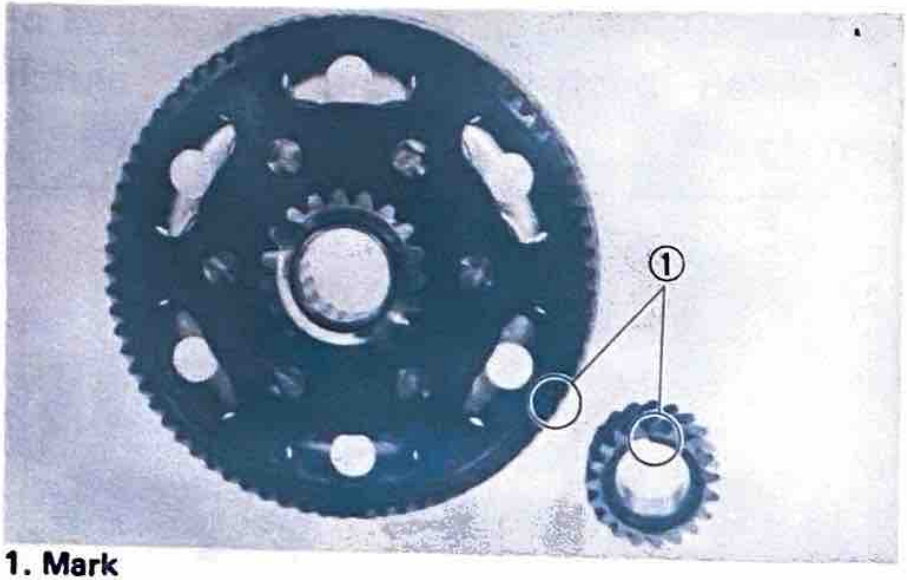
Galling on either the friction plate dogs of the clutch housing or clutch plate splines of the clutch boss will cause erratic clutch operation.



Primary drive/driven

If primary drive and driven gears produce excessive noise during operation, gear lash may be incorrect. Marks are scribed on the side of each gear.

And in replacement, a gear having the same mark as before must be used.

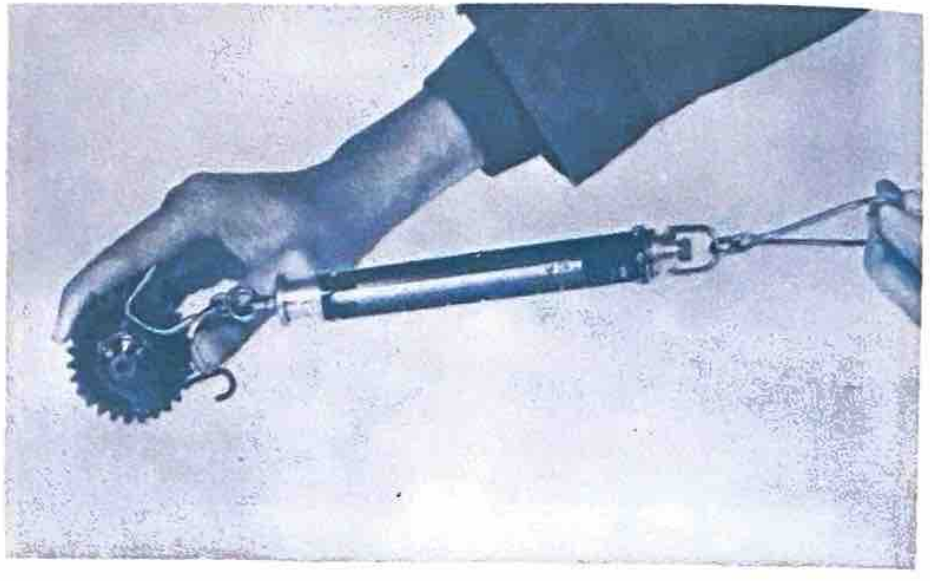


1. Mark

KICK STARTER

Inspection

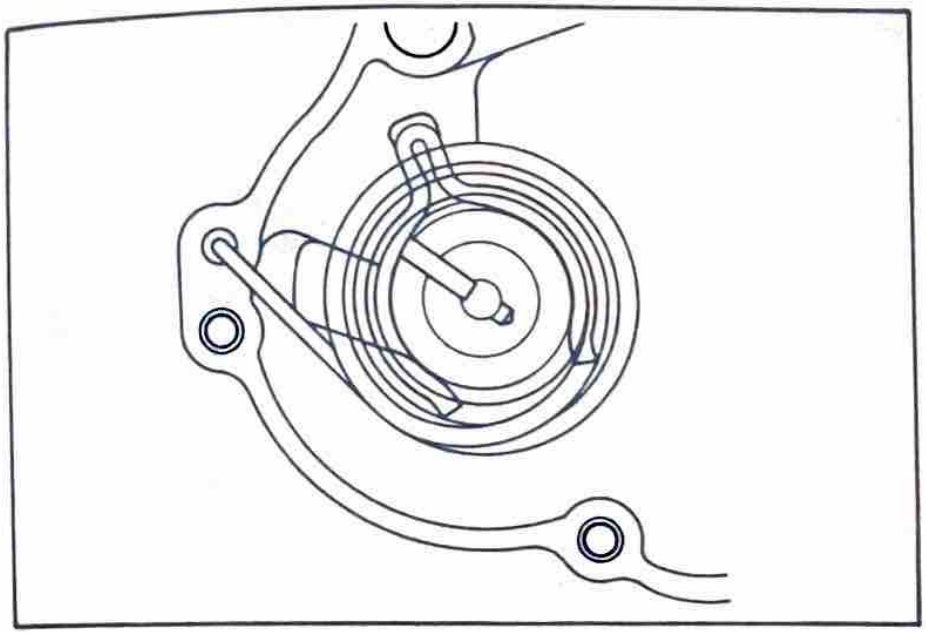
1. The pressure of the kick clips is 0.8~1.2 kg (1.76~ 2.65 lb). If above pressure is too strong, spring wear and kick starter slipping will result. If it is too weak, the same slippage will occur particularly at low temperatures. Do not try to bend the clip.



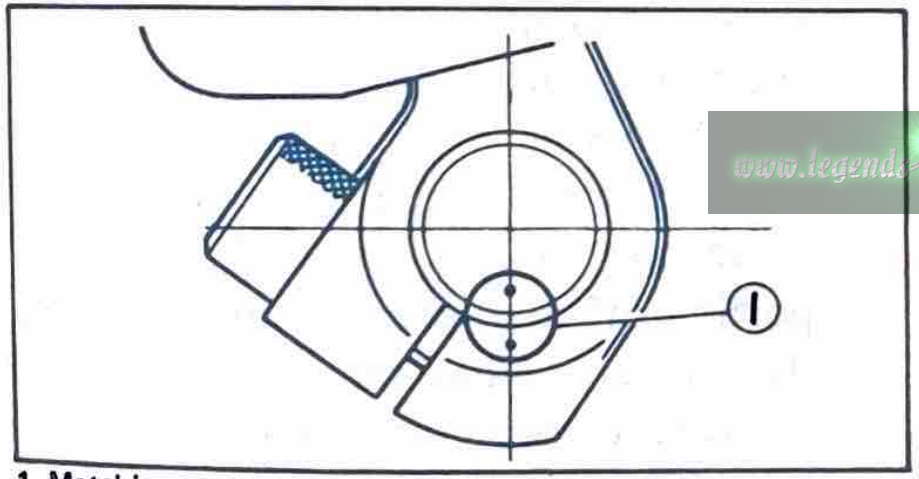
2. Check the clip for damage and wear, and determine whether or not, it should be replaced.

Installation

1. Fit the kick gear clip in the crankcase groove, and install the kick gear assembly.

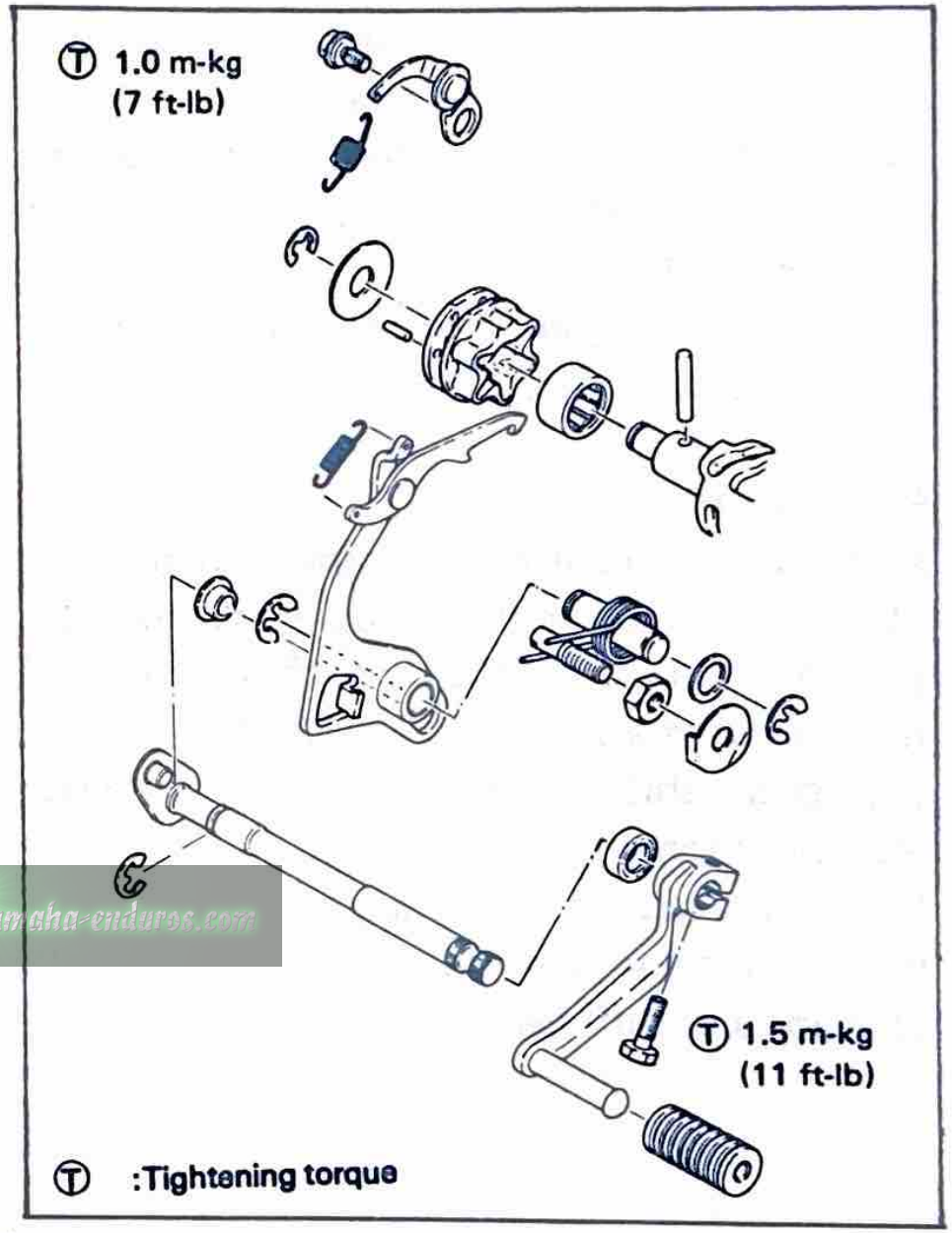


2. After installing the kick assembly be sure to check wherethere it operates smoothly or not.



1. Matching marks

SHIFTER



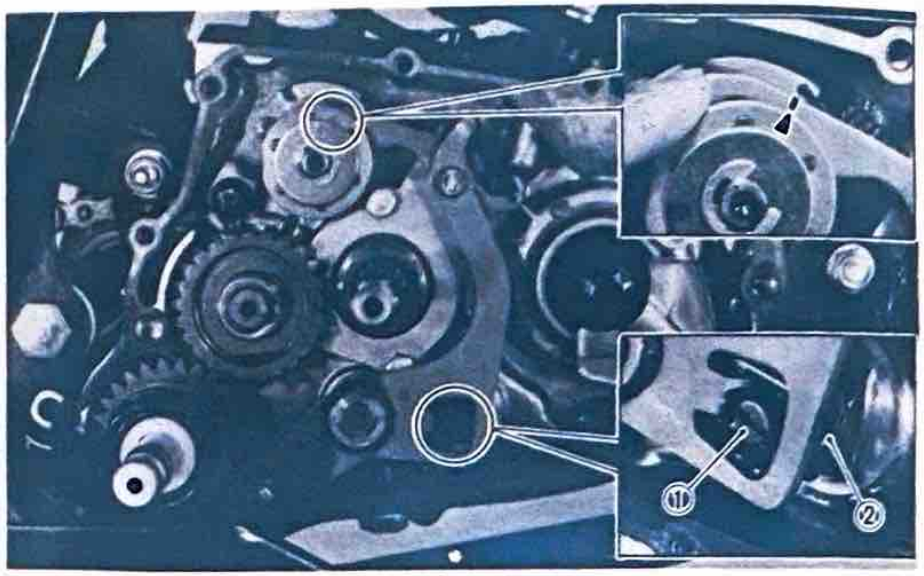
Inspection

1. Check the segment for signs of wear or damage. Replace as required.
2. Check shift cam dowel pins and side plate for damage, or wear. Repair as required.
3. Check stopper lever roller for wear. Replace as required.

Adjustment

Adjusting or correcting the travel of the gear shift arm to prevent improper shifting progression (excess feed or insufficient feed of the gear shift arm) is accomplished by turning the gear shift return spring stop screw (eccentric screw) in or out.

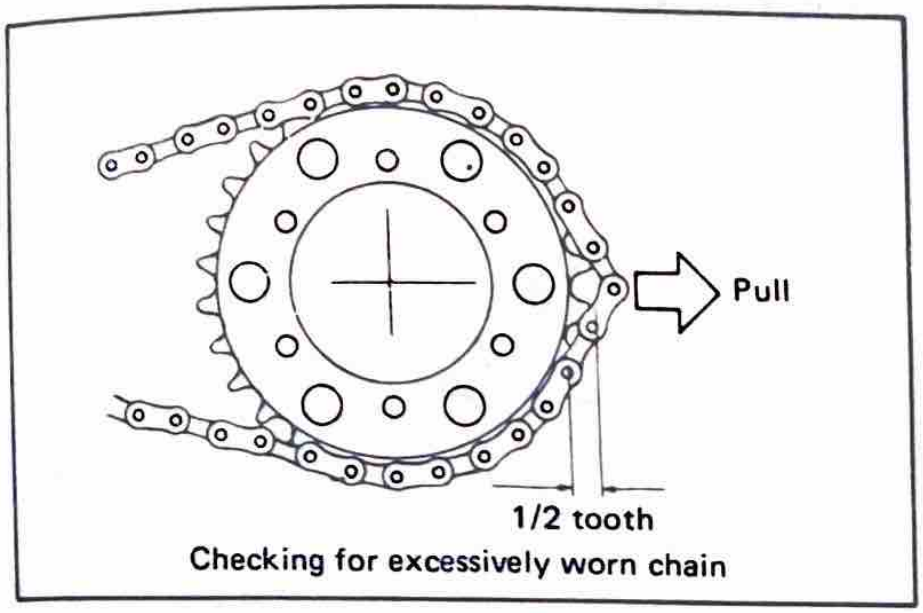
Engage the gear in first and adjust with adjusting screw so that the mating marks meet on segment and shift lever.



1. Adjusting screw 2. Lock nut

Drive chain

1. With the chain installed on the machine, excessive wear may be checked for by taking up chain freeplay and pulling the chain away from the rear sprocket. If the chain will lift away more than one-half the length of the sprocket teeth, remove and inspect the chain. If any portion of the chain shows signs of damage, or if either sprocket shows signs of excessive wear, remove and replace.



Checking for excessively worn chain

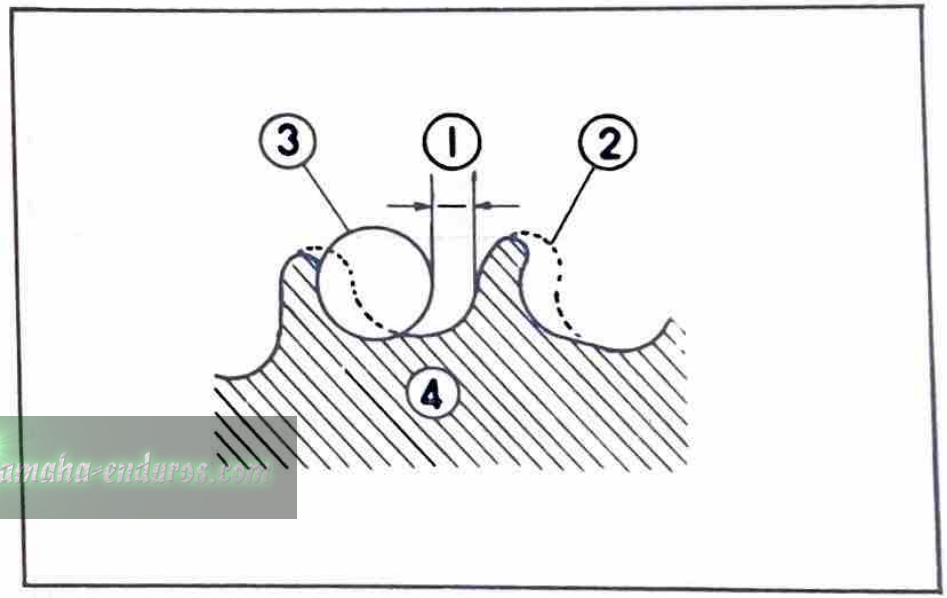
2. Check the chain for stiffness. If stiff, soak in solvent solution, clean with wire brush and dry with high pressure air. Oil chain thoroughly and attempt to work out kinks. If still stiff, replace.
3. Check the side plate for damage. Check to see if excessive play exists in pins and rollers. Check for damaged rollers. Replace as required.

NOTE:

If either chain or sprocket must be replaced due to excessive wear, be sure to replace both as a set.

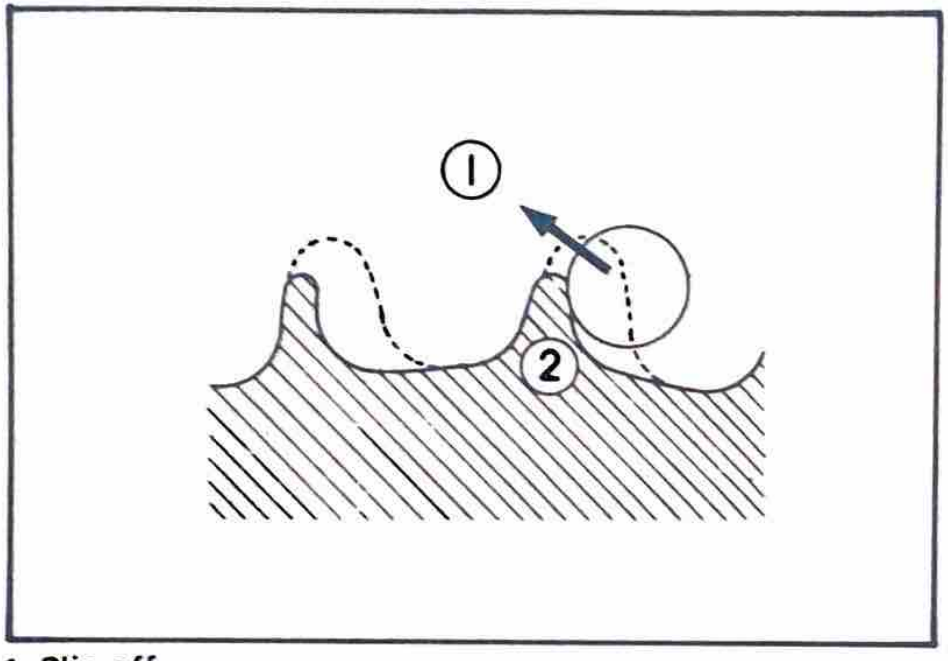
Sprockets

1. Check sprocket wear. Replace if tooth width has decreased as shown.



1. 1/4 tooth
2. Correct
3. Roller
4. Sprocket

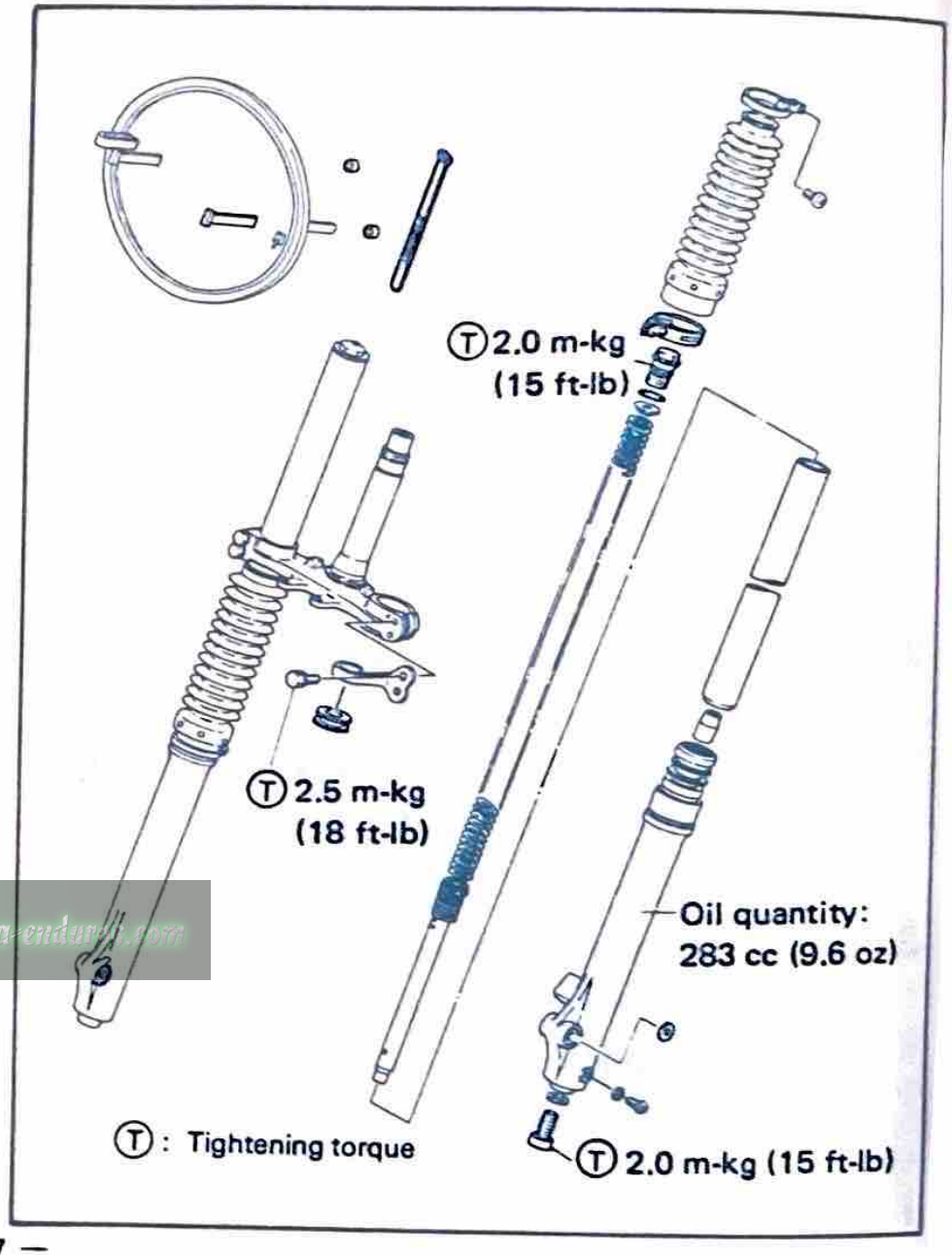
2. Replace if tooth wear shows a pattern resembling that in the illustration.



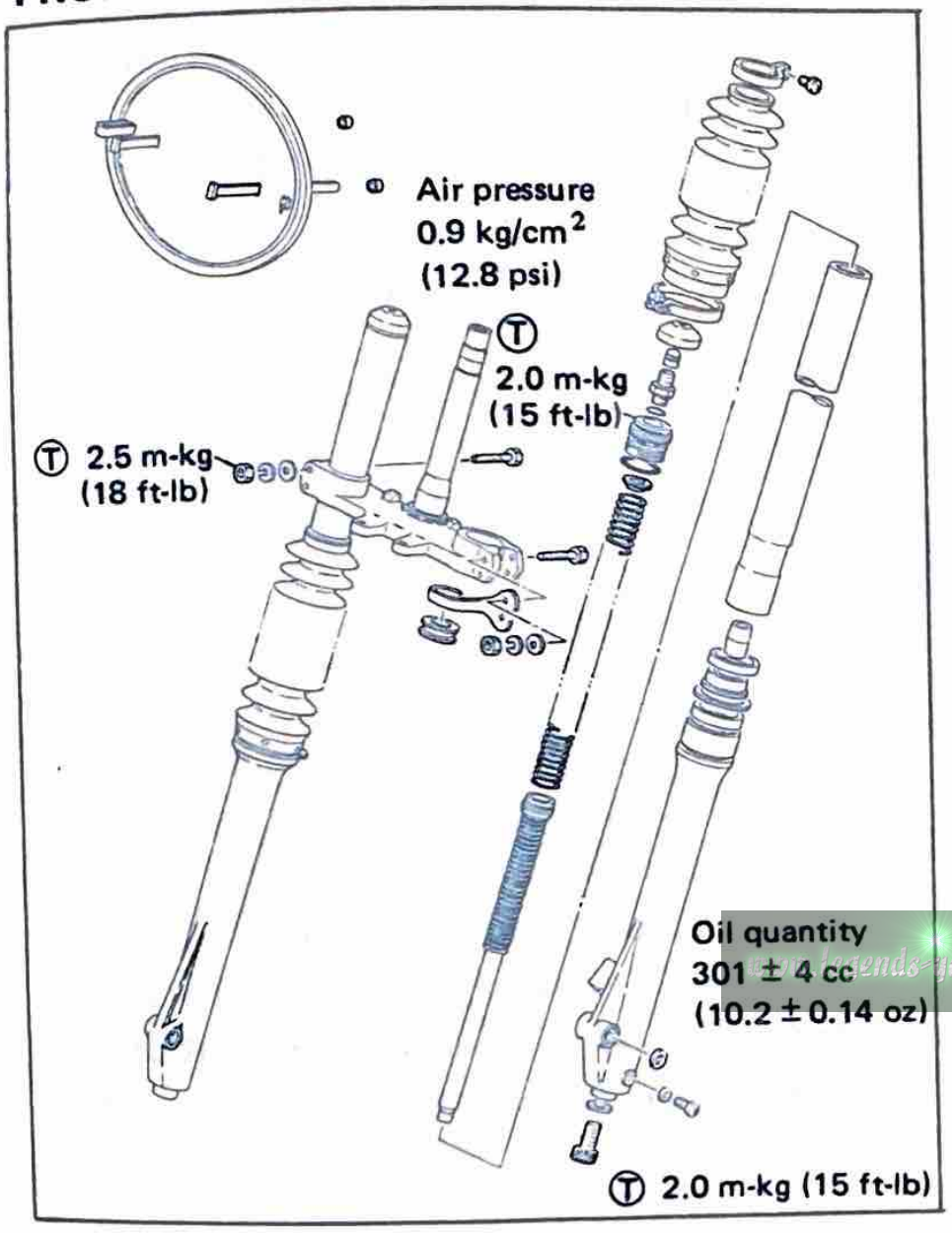
1. Slip off
2. Bend teeth

Drive sprocket securing nut torque:
5.5 m-kg (40 ft-lb)
Driven sprocket securing nut torque:
4.0 m-kg (29 ft-lb)

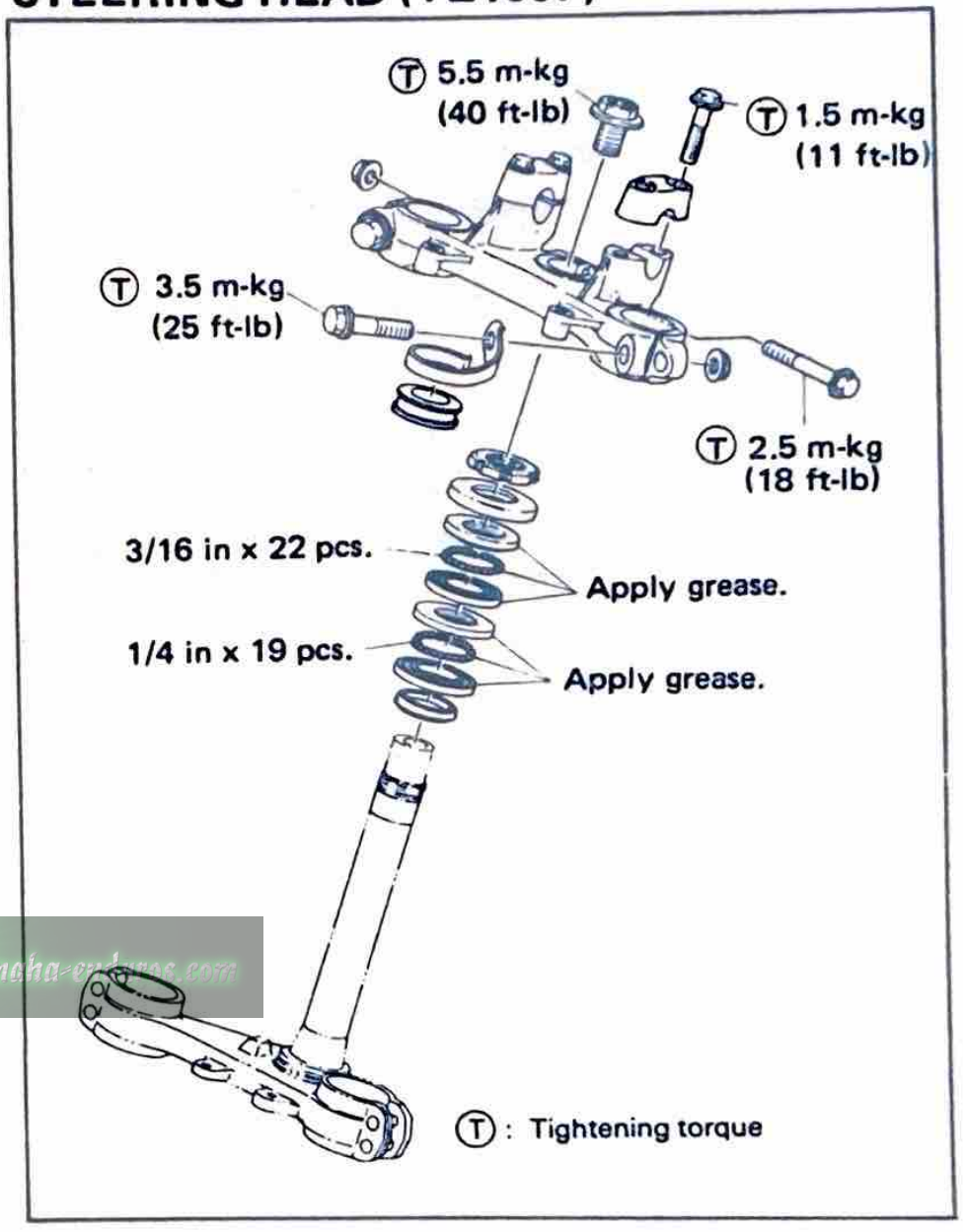
FRONT FORK (YZ100F)



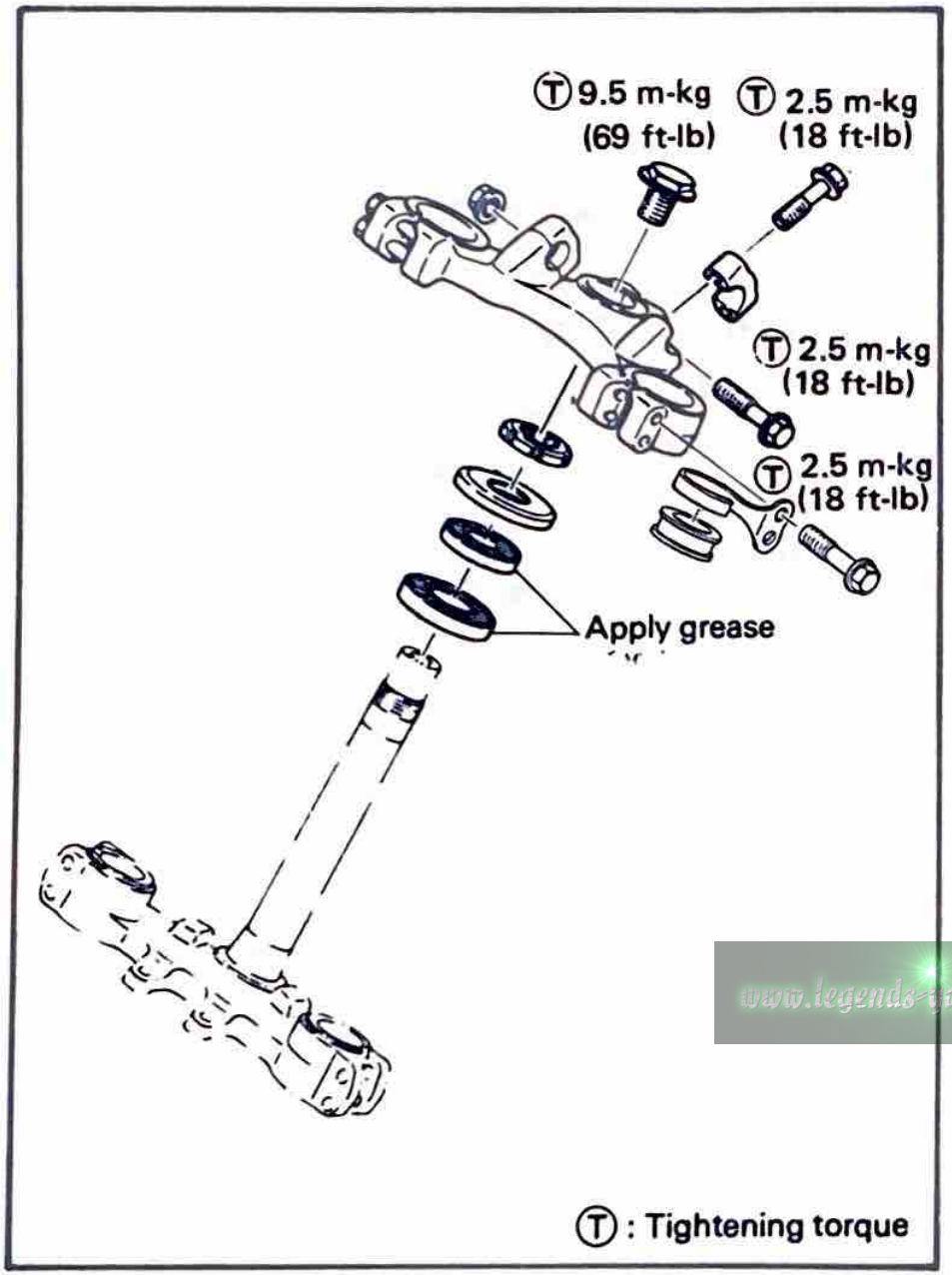
FRONT FORK (YZ125F)



STEERING HEAD (YZ100F)

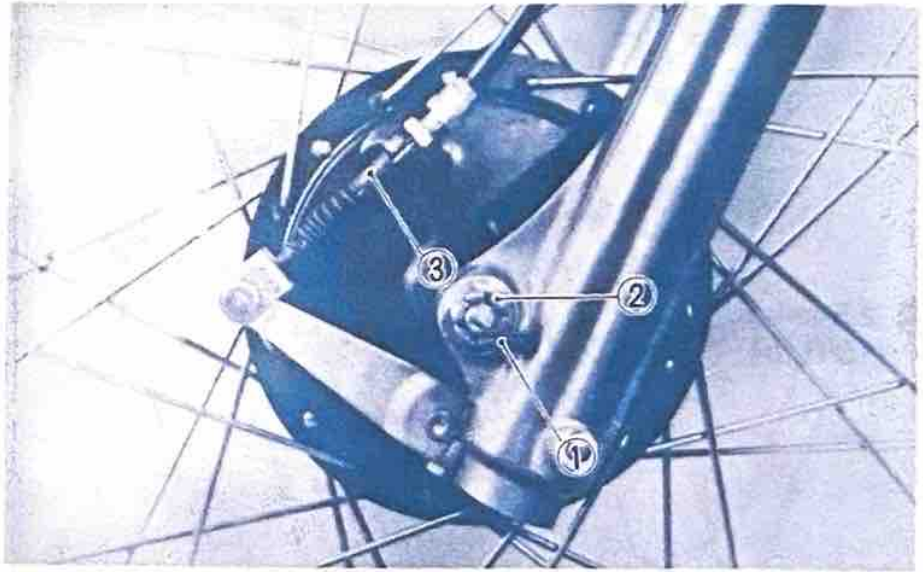


STEERING HEAD (YZ125F)



Front wheel removal

1. To remove the front wheel, disconnect the brake cable at the front brake lever.

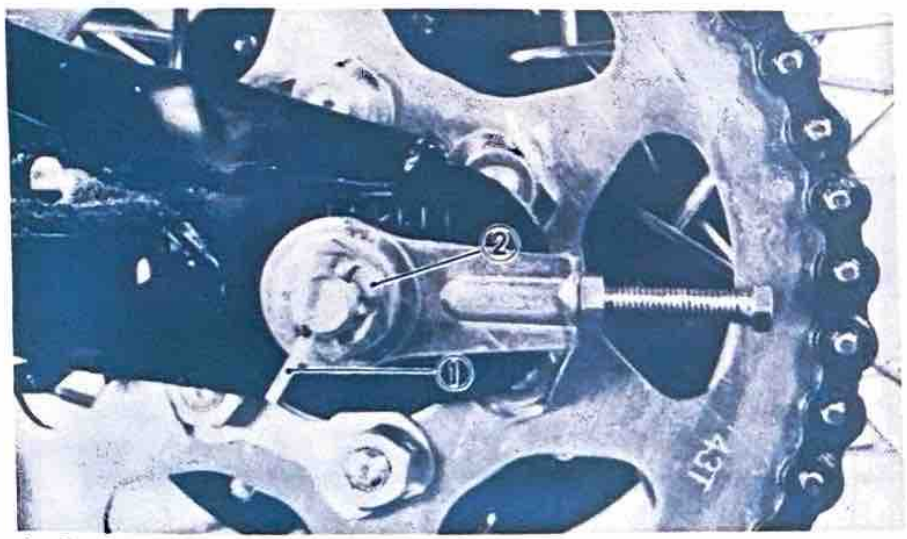


1. Cotter pin 2. Axle nut 3. Brake cable

2. Remove cotter pin from front wheel nut.
3. Remove the front wheel nut.
4. Put a box or stand under the engine.
5. Remove the front wheel axle by simultaneously twisting and pulling out on the axle. Then remove the wheel assembly.

Rear wheel removal

1. Remove the brake rod from rear shoe plate.
2. Disconnect the drive chain.
3. Remove cotter pin from rear wheel axle nut.



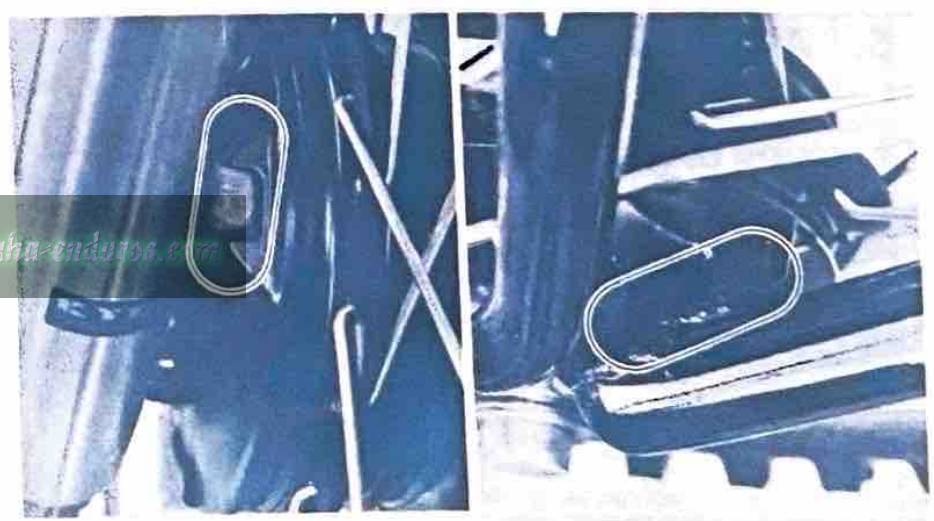
1. Cotter pin 2. Axle nut

4. Remove the rear wheel axle nut.
5. Remove the tension bar bolt and rear brake adjuster. (YZ125F)
6. Pull out the rear wheel shaft by simultaneously twisting and pulling out.
7. Remove the rear brake shoe plate.
8. Remove the chain from rear sprocket and then remove the rear wheel assembly.

Wheel installation

When installing wheels, reverse the removal procedure, taking care of the following points:

1. Check for proper engagement of the boss on the outer tube (or swing arm) with the locating slot on the brake shoe plate. (YZ100F)
2. Install the tension bar bolt and rear brake adjuster. (YZ125F)



3. When installing chain, master link clip must be installed with closed end facing the direction of travel.
4. Adjust the plaies in the brake lever and pedal.
5. Make sure the axle nuts are properly tightened.

Tightening torque:		
	YZ100F	YZ125F
Front	4.0 m-kg (29 ft-lb)	8.5 m-kg (61 ft-lb)
Rear	8.5 m-kg (61 ft-lb)	8.5 m-kg (61 ft-lb)

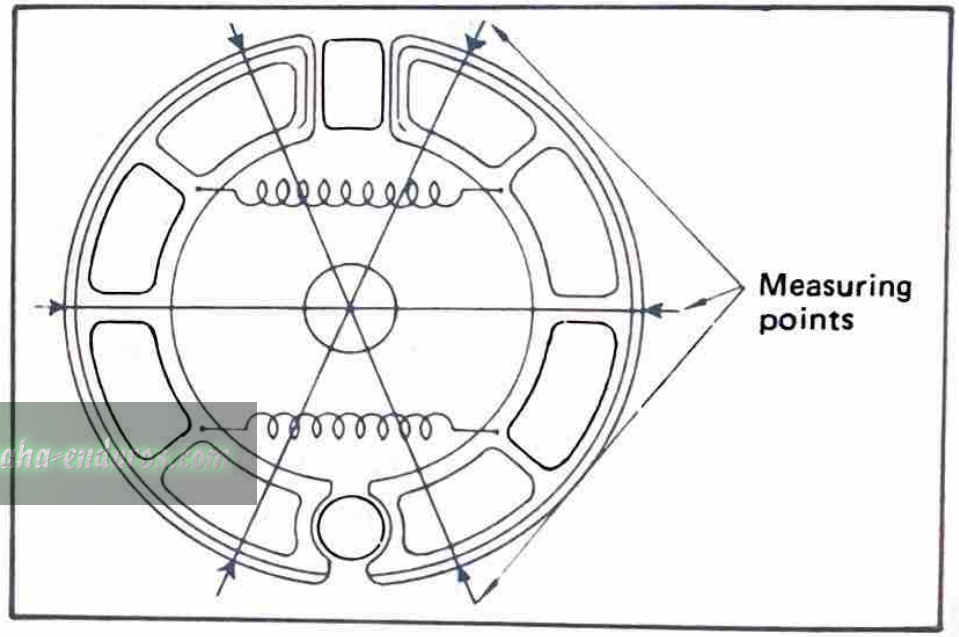
6. Always use new cotter pins.

Checking brake shoe wear

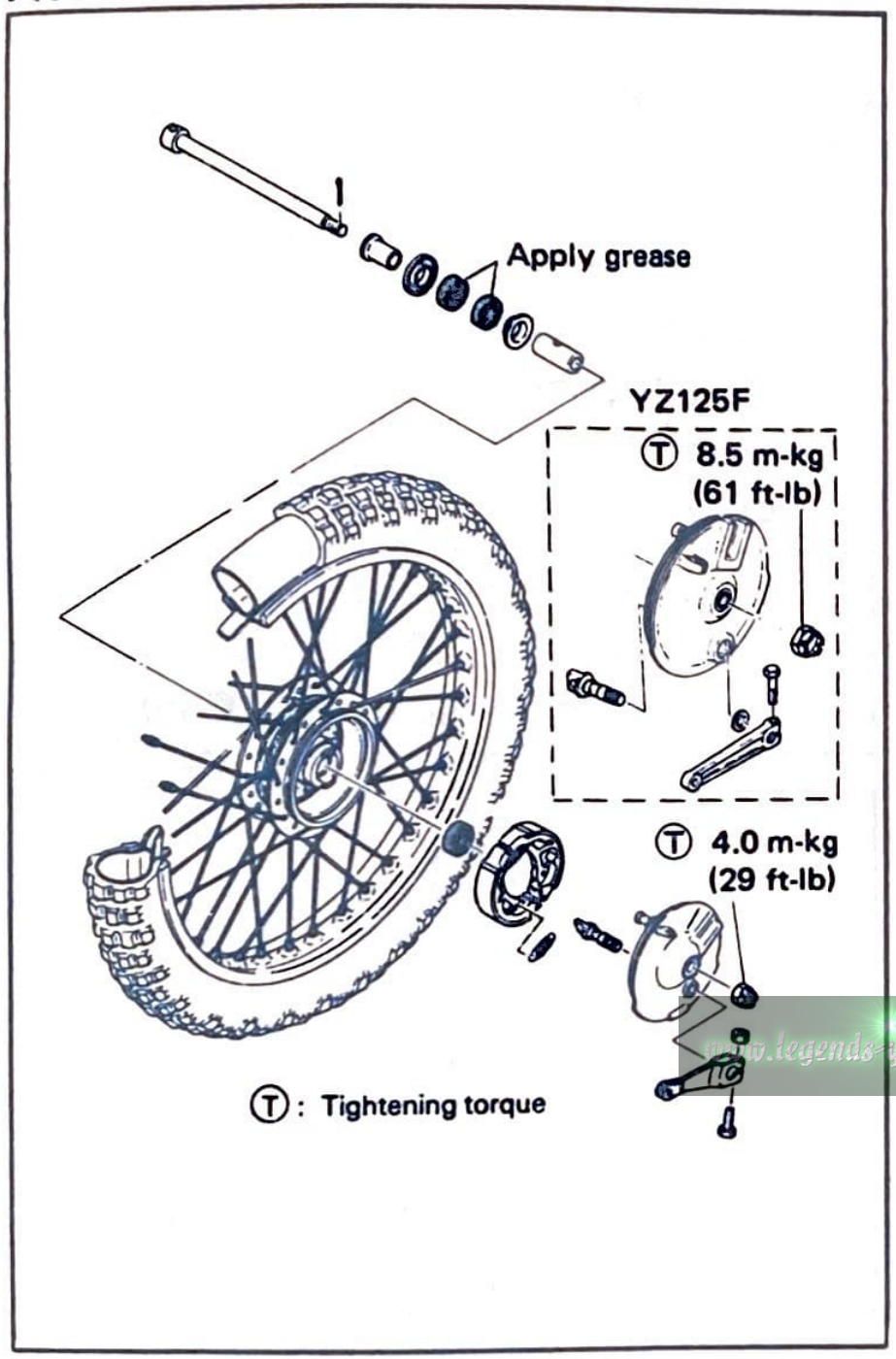
Measure the outside diameter at the brake shoe with slide calipers. If it measures less than specified replace brake shoes.

Minimum shoe diameter:		
	YZ100F	YZ125F
Front	106 mm (4.17 in)	126 mm (4.96 in)
Rear	126 mm (4.96 in)	126 mm (4.96 in)

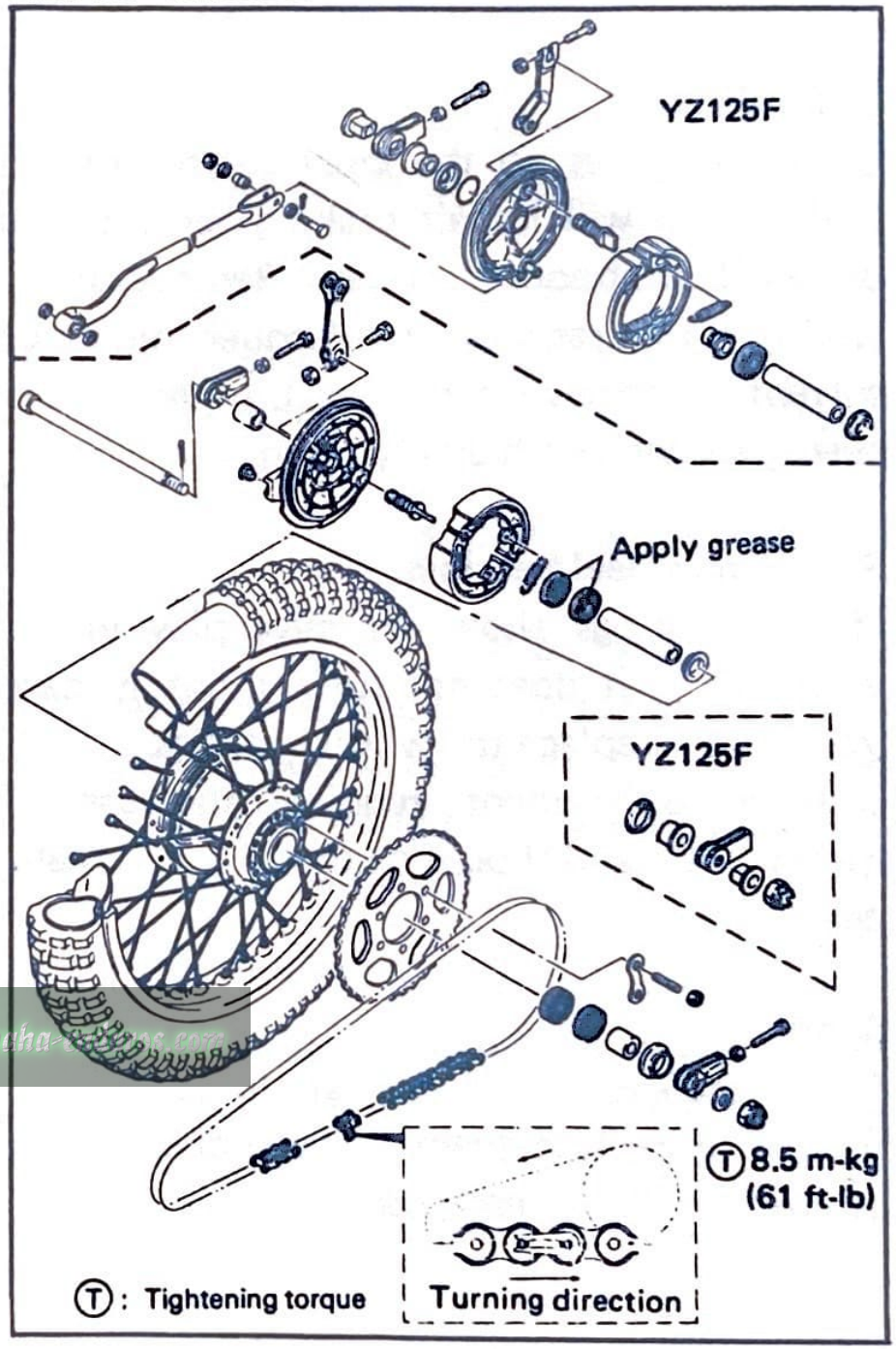
Minimum brake lining thickness:
2 mm (0.08 in)



FRONT WHEEL



REAR WHEEL



Brake drum

Oil or scratches on the inner surface of the brake drum will impair braking performance or result in abnormal noises. Remove oil by wiping with a rag soaked in lacquer thinner or solvent. Remove scratches by lightly and evenly rubbing with emery cloth.

Replacing wheel bearings

If the bearings allow excessive play in the wheel or if it does not turn smoothly have your dealer replace the wheel bearings.

Bearing replacement requires the use of special tools and should be done by a Yamaha dealer.

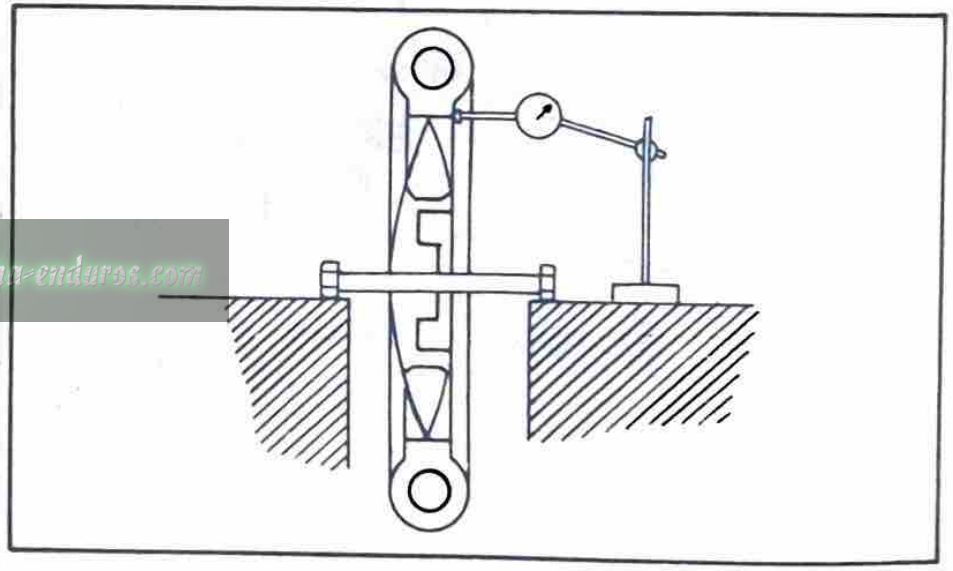
Spokes

Check the spokes. If they are loose or bent, tighten or replace them. The spokes should be checked before each use.

Checking rim

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

Rim run-out limits:
Vertical – 2.0 mm (0.08 in)
Lateral – 2.0 mm (0.08 in)



Tire removal and tire repair

1. Remove the wheel from the motorcycle.
2. Remove lock nut from valve stem and release as much air as possible from the tire.
3. Push both tire beads away from the edges of the rim.
4. Starting opposite the valve stem on one side, use two round-ended tire irons to work the bead off the rim.

NOTE:

Use tire removal lubricant and be careful not to pinch the tube with the tire irons.

5. Remove the valve stem from its hole and remove the tube.
6. If the tire is to be changed, remove the second bead from the rim using the tire irons and tire lubricant.

Inspection

1. Use a cloth to check for nails or other sharp objects in the tire.

WARNING:

Always use a cloth to avoid injuring your hand.

2. Check for faults in the side wall. If there is any fault, the tire should be replaced as a damaged tire may brust at high speeds, which is obviously extremely dangerous.
3. Inflate the tube with air and check the valve stem and the tube for damage and leakage replace as required. Some leaks can be patched in an emergency, but it is best to replace the tube.

Reassembly

1. Install one tire bead on the rim using tire irons and lubricant and then install the tube.
2. Inflate tube with air to about one-third the specified pressure. Hit the outer circumference of the tire with a soft

hammer to make certain the tube is not caught between tire and rim. Release air from tube.

3. Inspect rim band and replace if damaged.
4. Install second tire bead starting opposite the valve stem using tire irons and tire mounting lubricant.
5. Inflate tire to approximately 2.0 kg/cm² (28 psi) and then reduce pressure to specified setting.

NOTE:

Check the valve stem; it must be pointing directly at center of wheel hub. If angled in any direction, release air and adjust tube position.

Tire air pressure

Improper tire pressure affects the smoothness of the tire, traction, handling and the life of the tires. Always maintain the correct tire pressure.

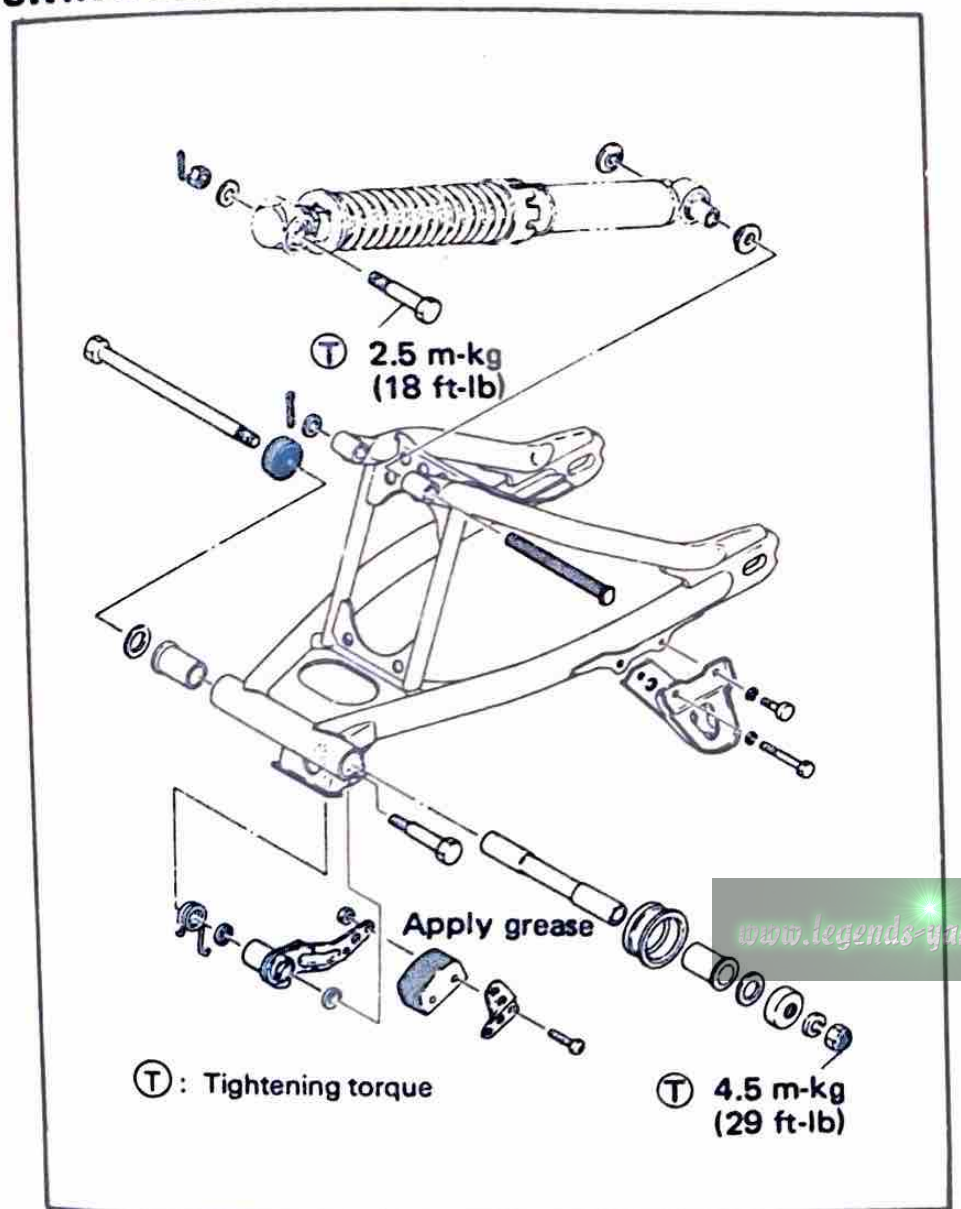
Tire pressure for normal riding:
Front ..... 1.0 kg/cm² (14 psi)
Rear ..... 1.2 kg/cm² (17 psi)

Cables

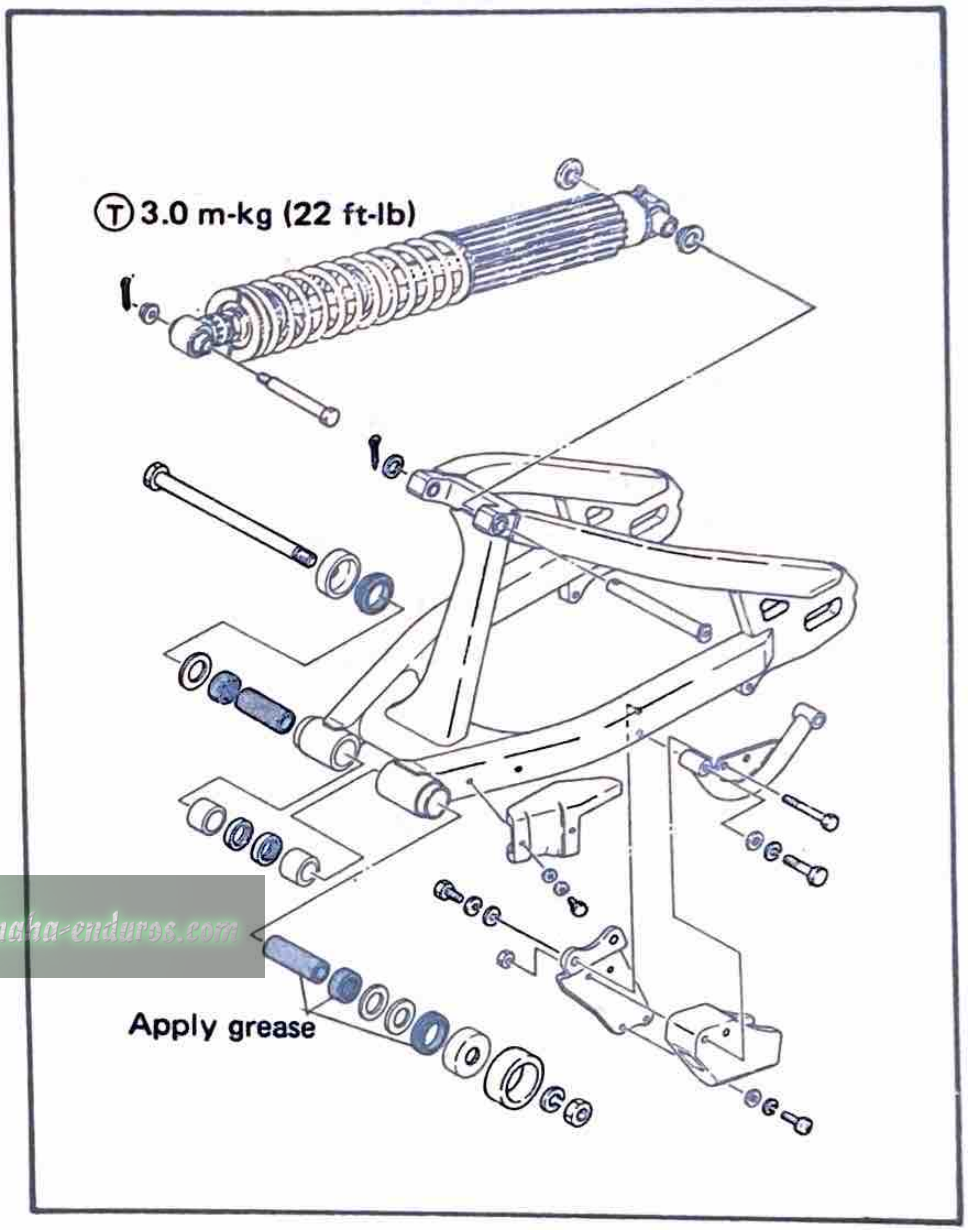
1. Remove the cable.
2. Check for free movement of the cable with its housing. If movement is obstructed, check for fraying of the cable strands. If fraying is evident, replace the cable assembly.
3. To lubricate cable, hold in vertical position. Apply lubricant to uppermost end of cable. Leave in vertical position until lubricant appears at bottom end. Allow excess to drain and reinstall.

Recommended lubricant:
Yamaha Chain and Cable Lube
or SAE 10W/30 motor oil

SWING ARM (YZ100F)



SWING ARM (YZ125F)



REAR SHOCK ABSORBER

Removal

1. Remove the two bolt holding the fuel tank (petcock lever must be placed in OFF). Lift up the front of the tank and remove it. "Remove the rear wheel assembly. (Except for YZ125F)"
2. Place a proper size wooden box or a frame stand under the engine to keep the rear wheel raised off the floor. (YZ125F)
3. Remove the cotter pin and nut.
   And remove the bolt securing the upper bracket to frame.

Upper bracket tightening torque:
2.5 m-kg (18 ft-lb)

4. Remove the cotter pin and pull out the pivot shaft from the lower bracket.

NOTE:
Always use a new cotter pin.

5. Remove the rear shock absorber from the frame.

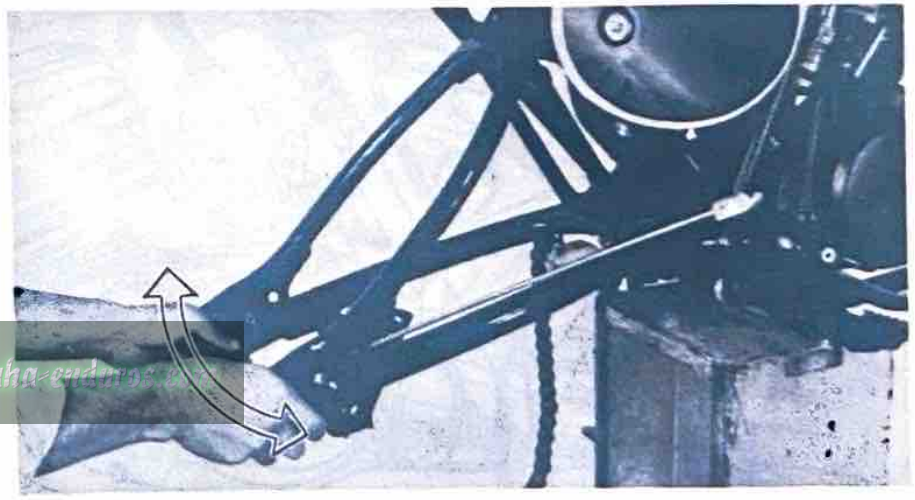
NOTE:

a. When remove the shock absorber, be careful not to bend the absorber rod.
b. Take care so the two washers are not lost.

Swing arm inspection

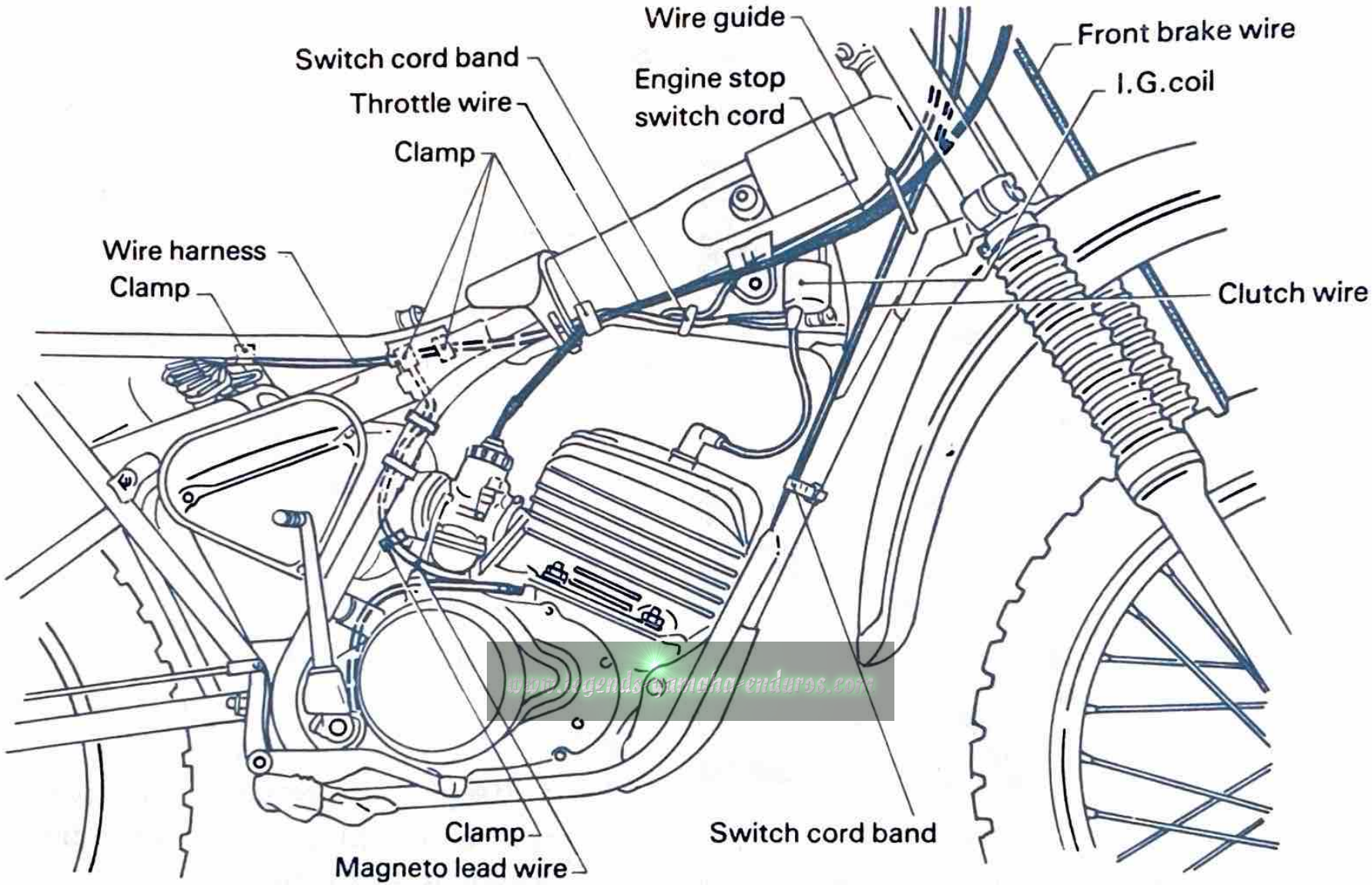
1. With rear wheel and shock absorbers removed, grasp the ends of the arm and move from right to left to check for free-play.

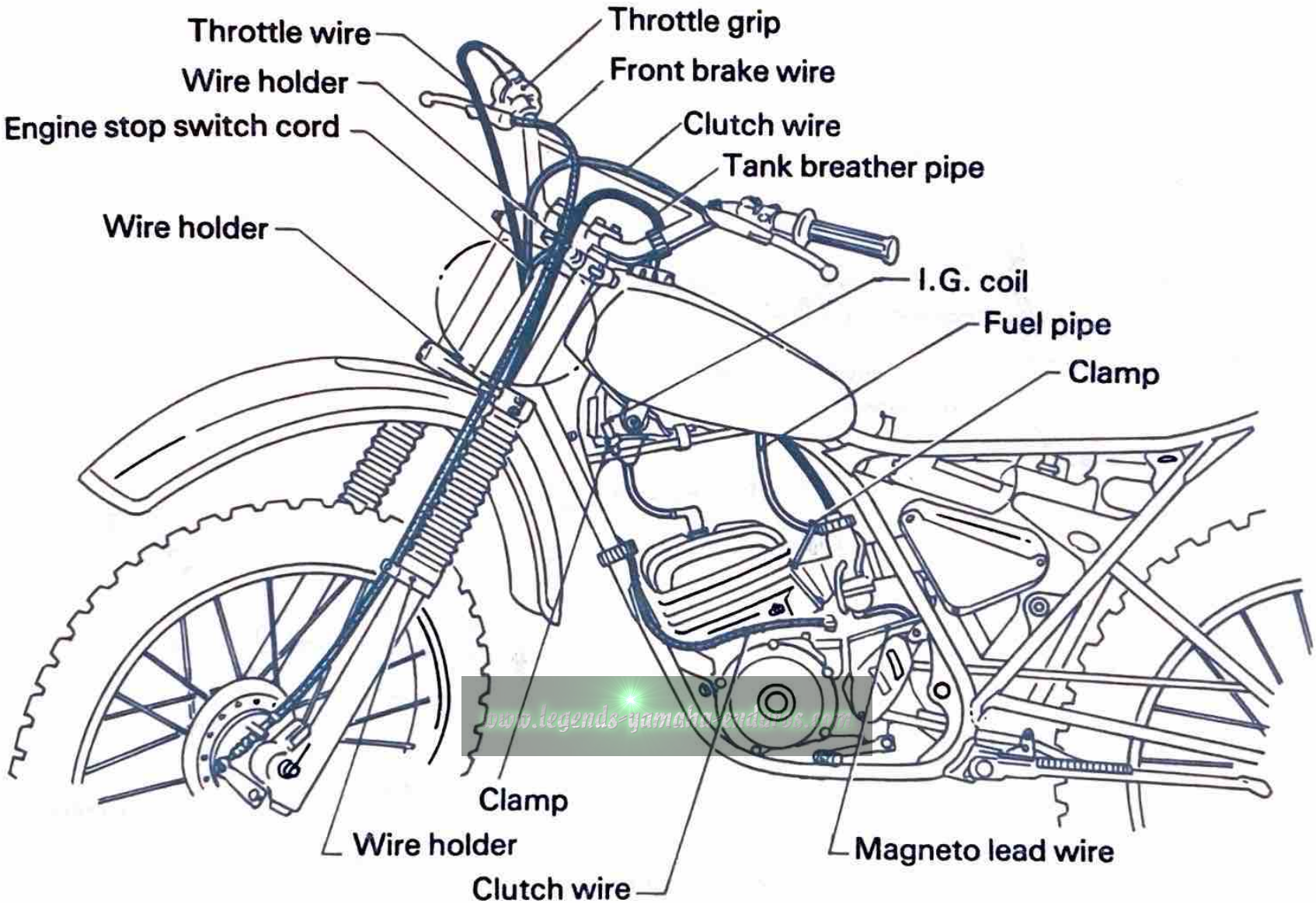
Swing arm freeplay:
0 ~ 1 mm (0 ~ 0.04 in)

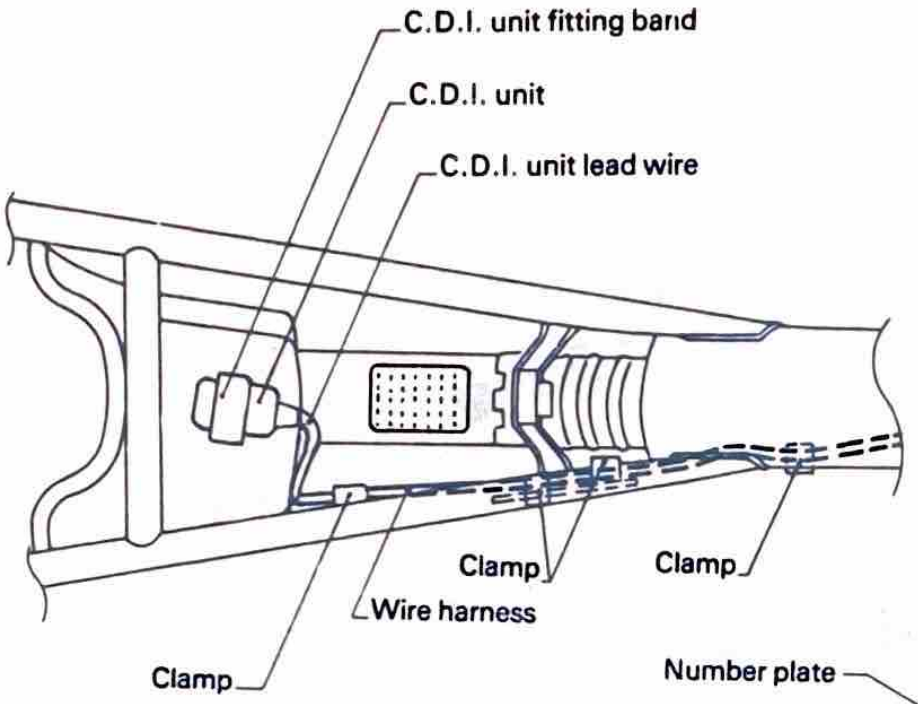


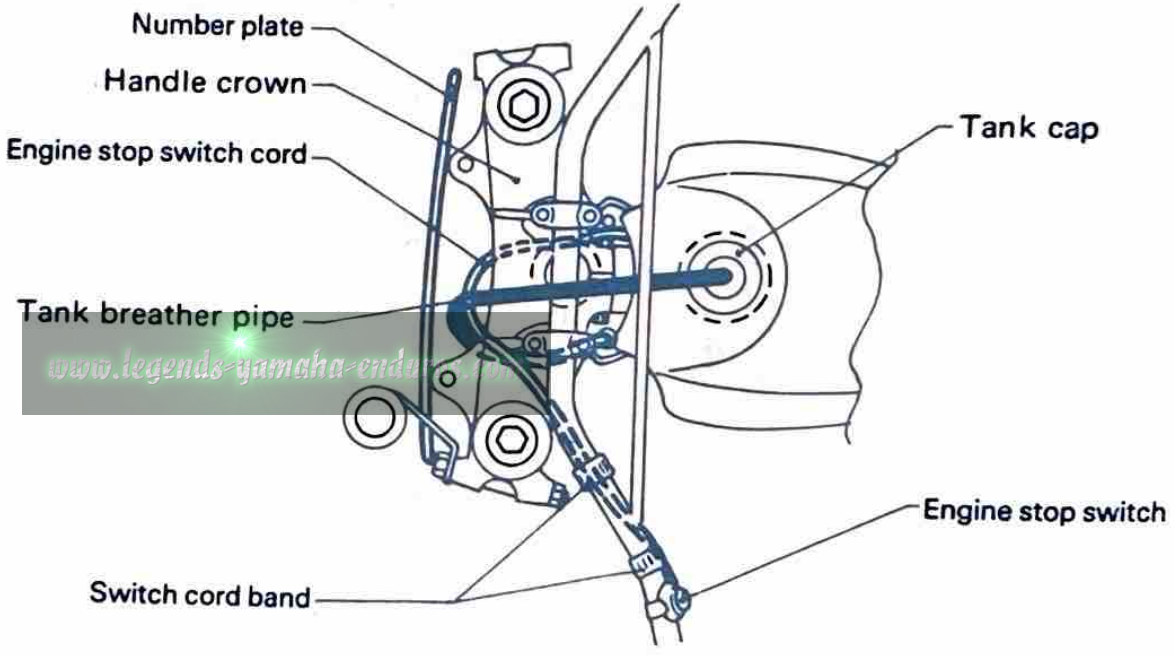
2. If freeplay is excessive, remove swing arm and replace swing arm bushings, "bearings. (YZ125F)"

CABLE ROUTING DIAGRAM (YZ100F)

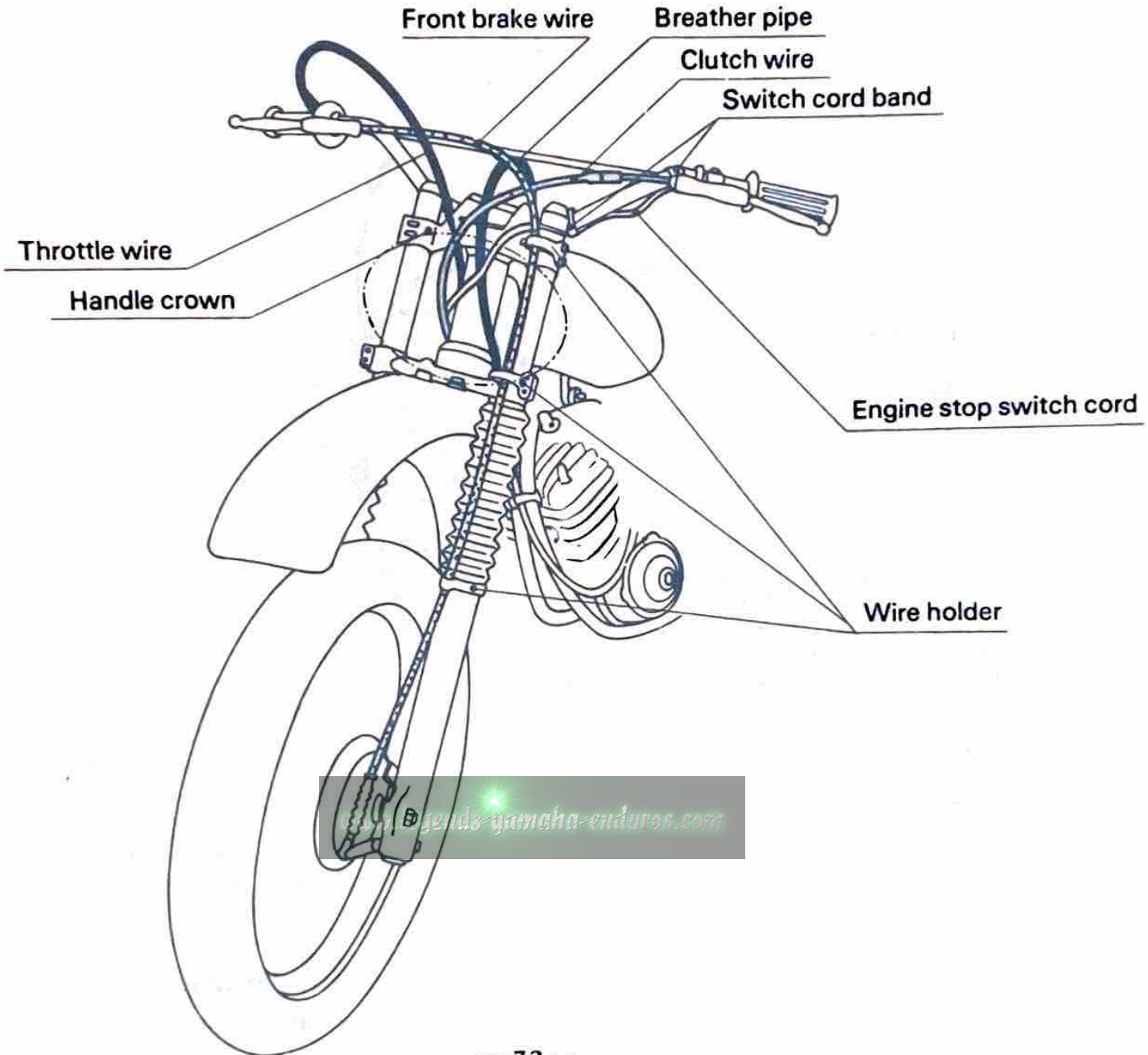


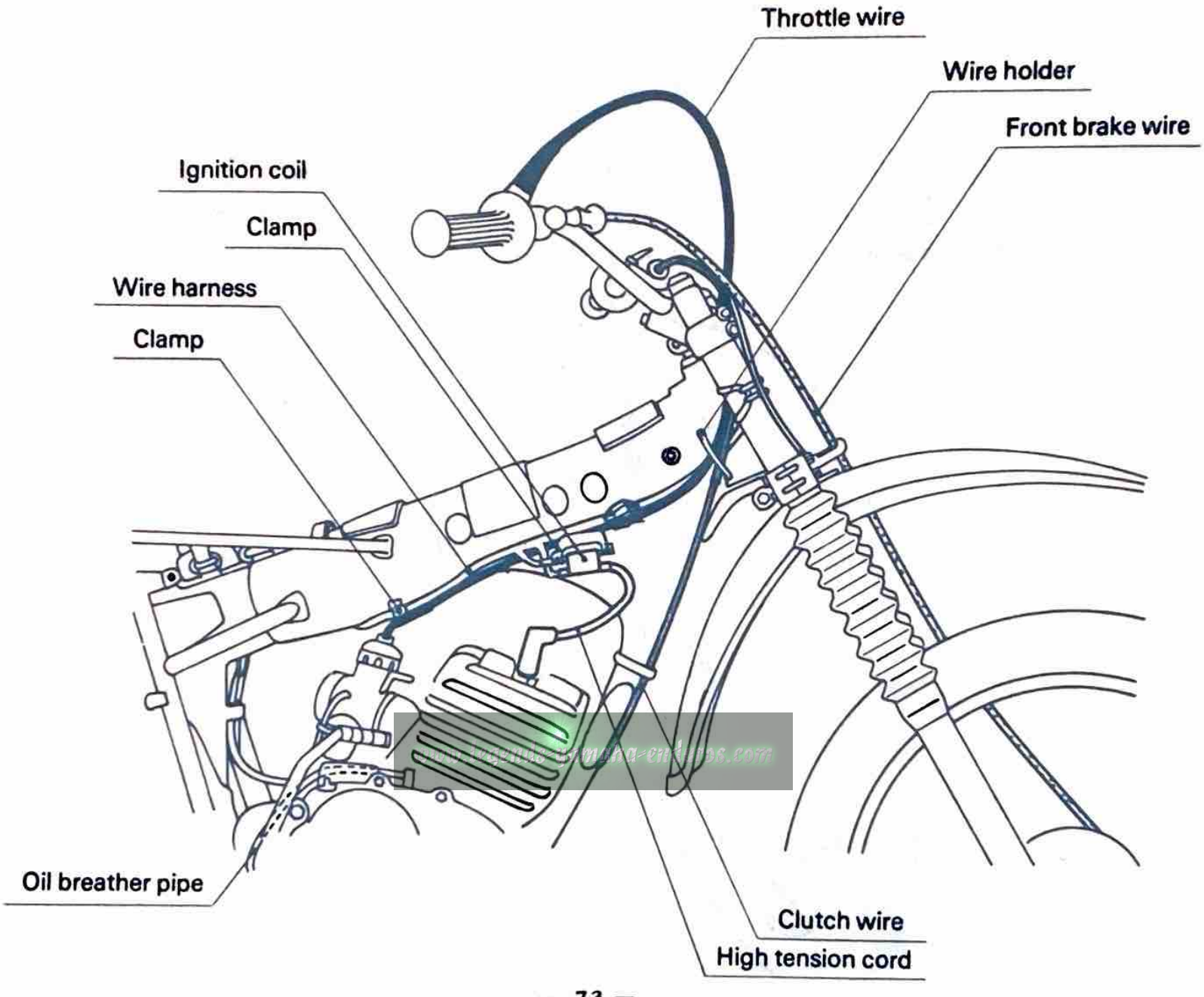


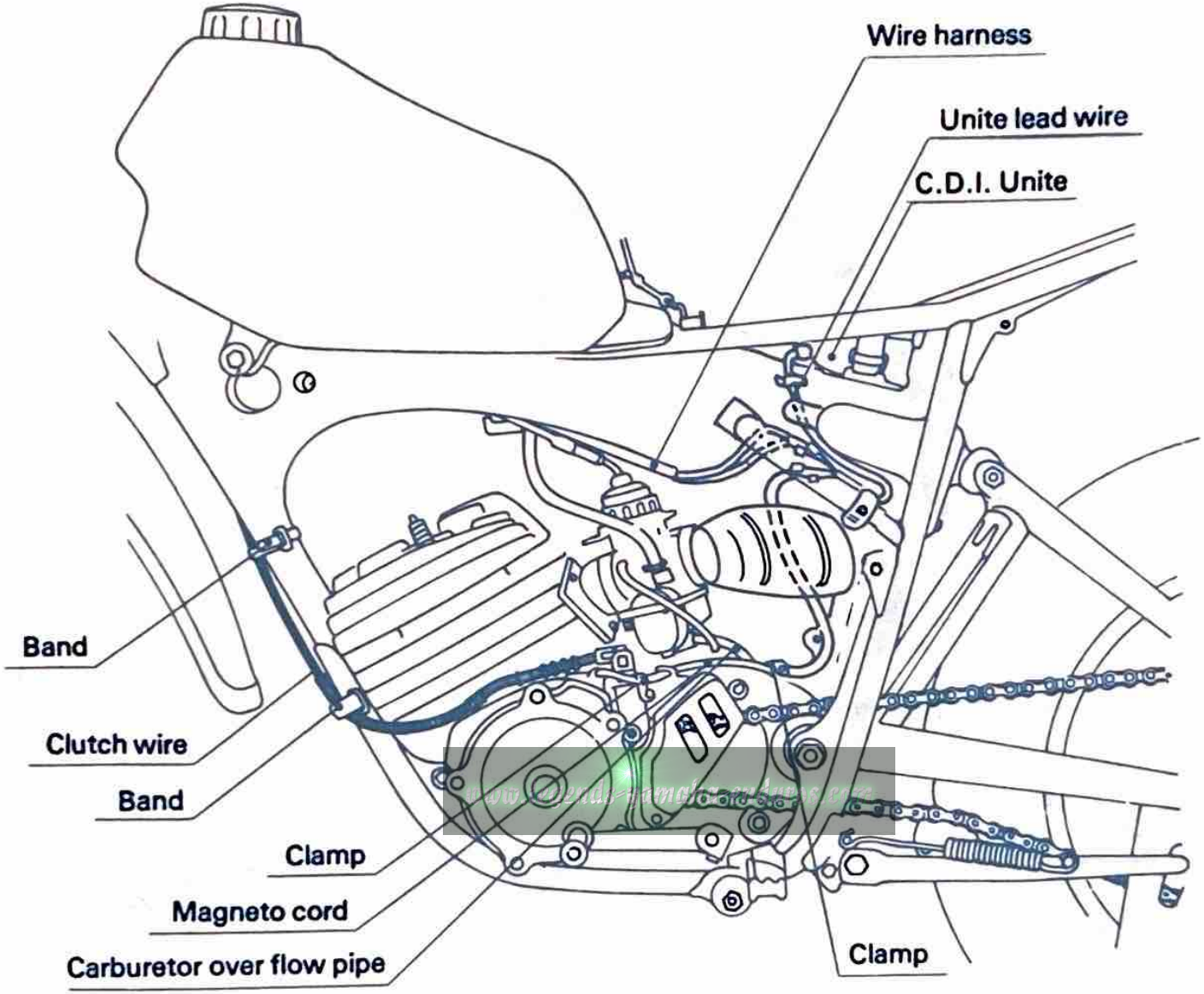


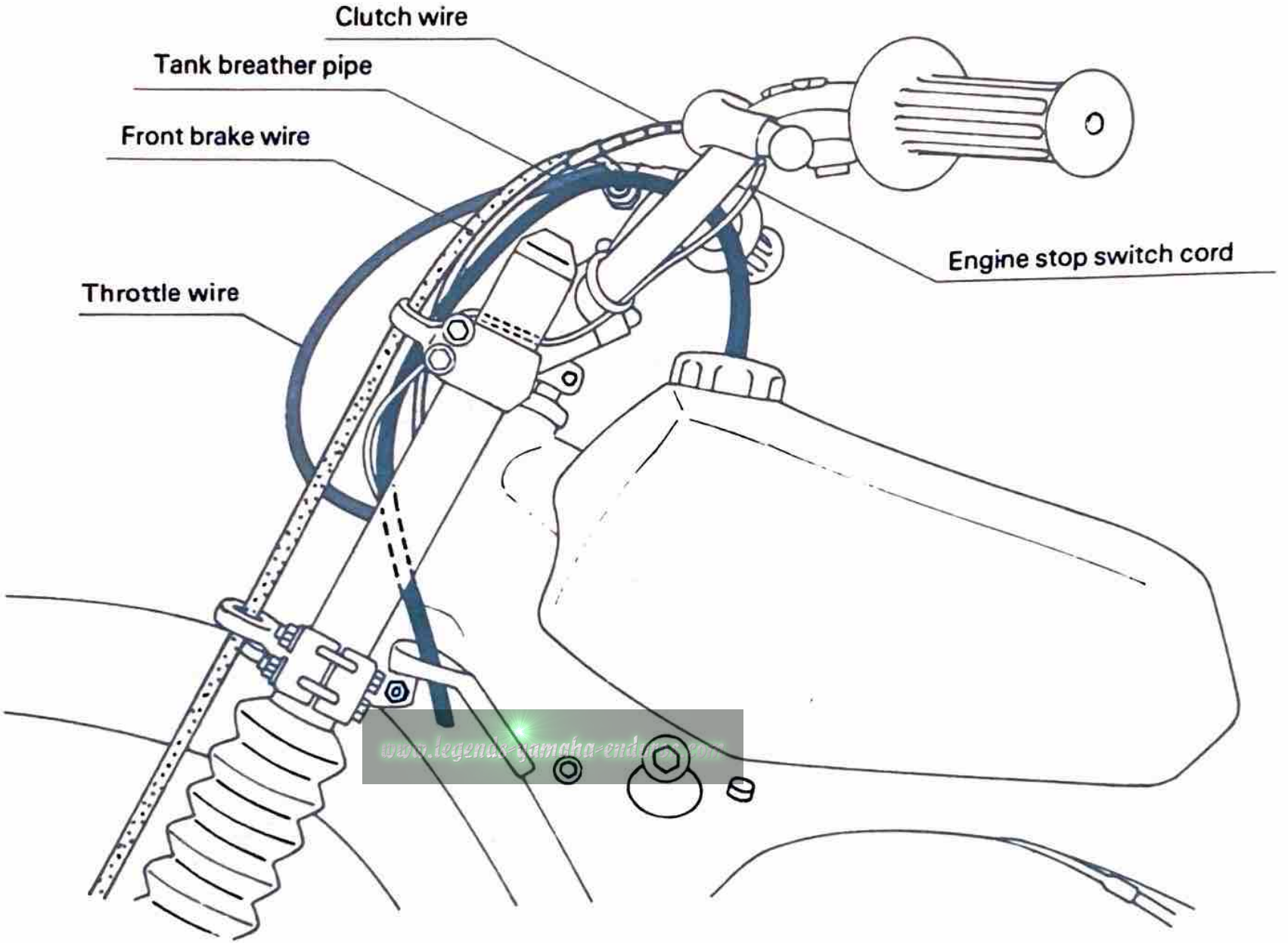


(YZ125F)



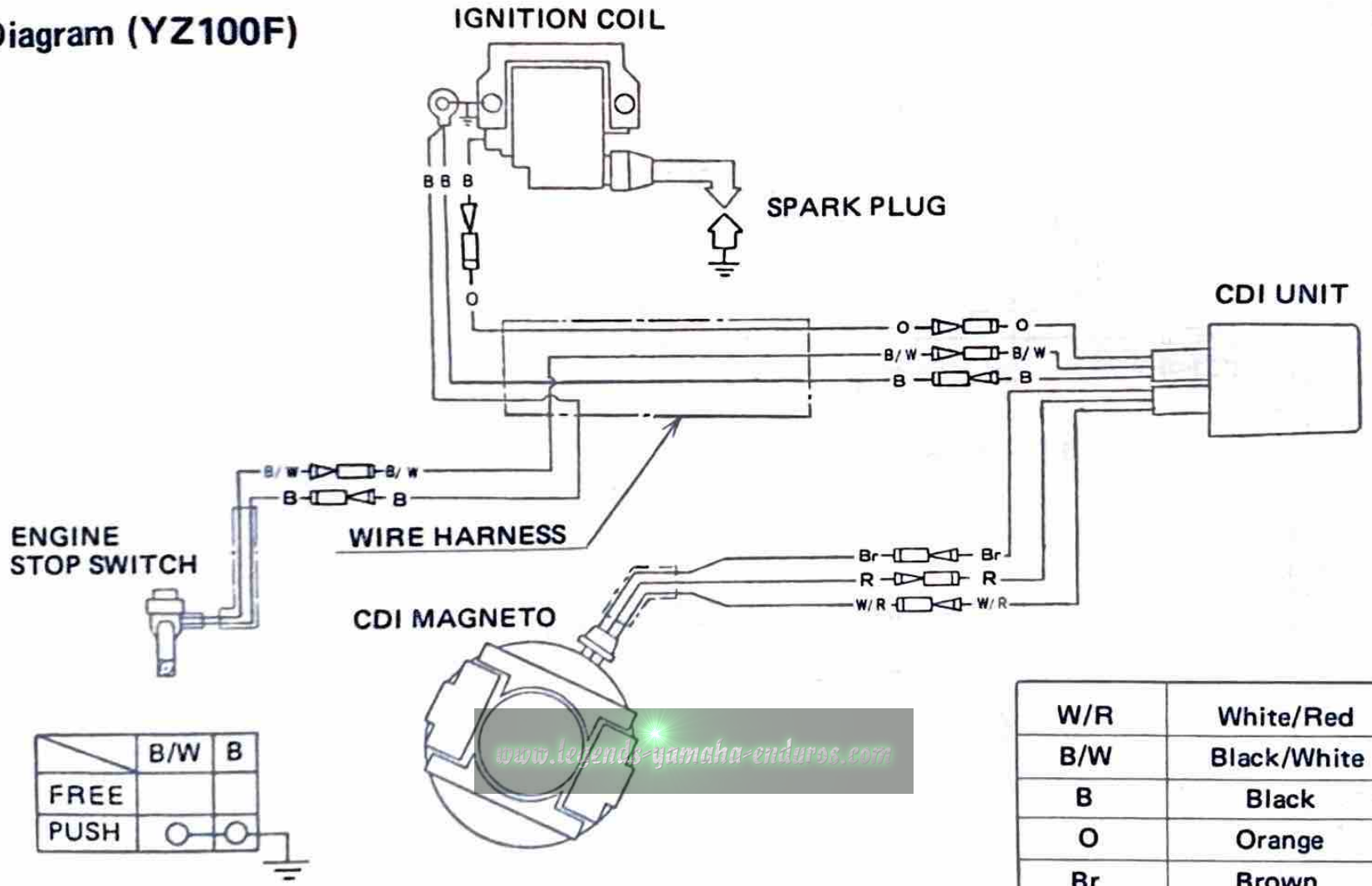

Throttle wire
Wire holder
Front brake wire
Ignition coil
Clamp
Wire harness
Clamp
Oil breather pipe
Clutch wire
High tension cord


Wire harness
Unite lead wire
C.D.I. Unite
Band
Clutch wire
Band
Clamp
Magneto cord
Carburetor over flow pipe
Clamp



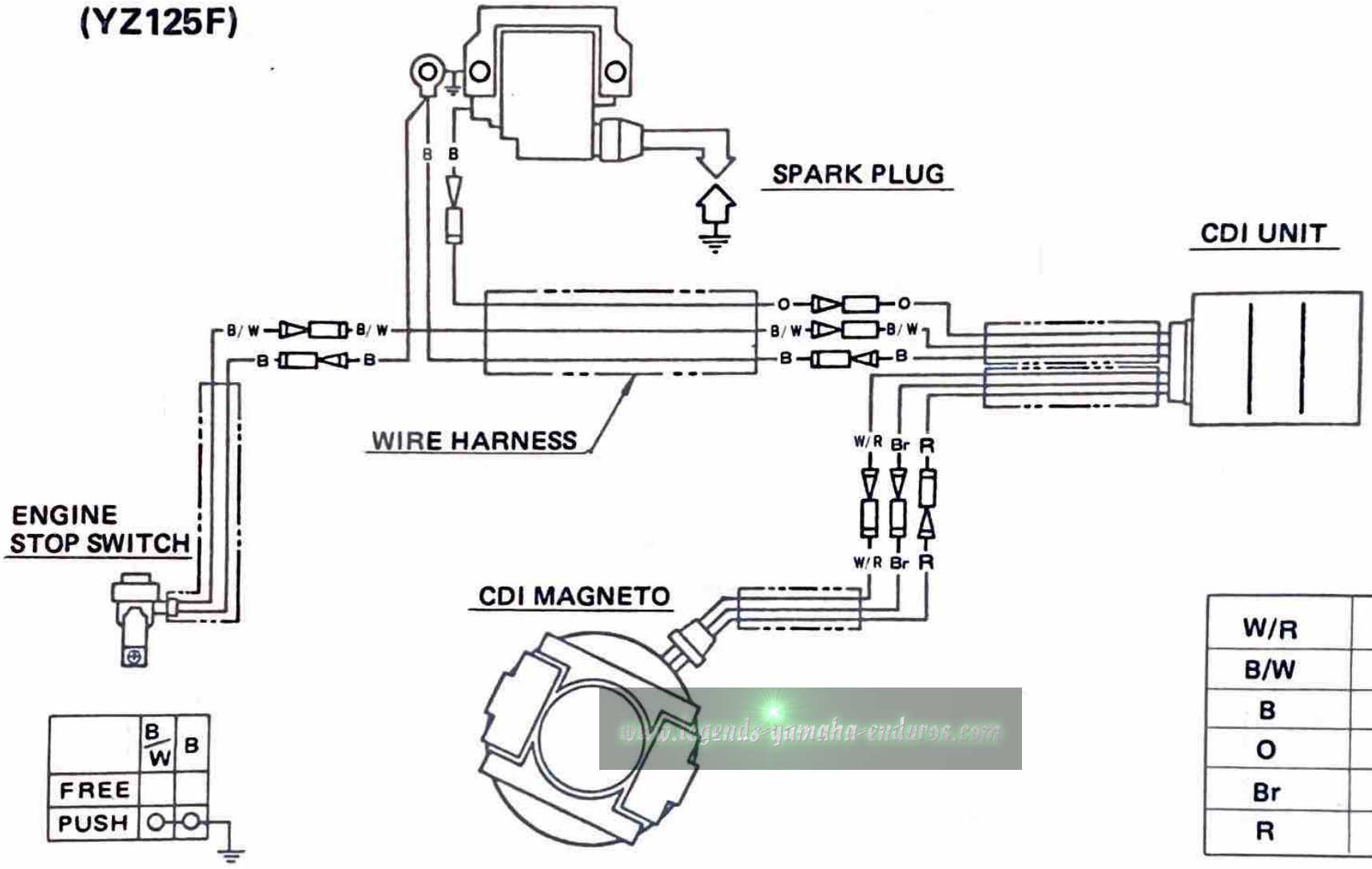
IGNITION

Wiring Diagram (YZ100F)



W/R	White/Red
B/W	Black/White
B	Black
O	Orange
Br	Brown
R	Red

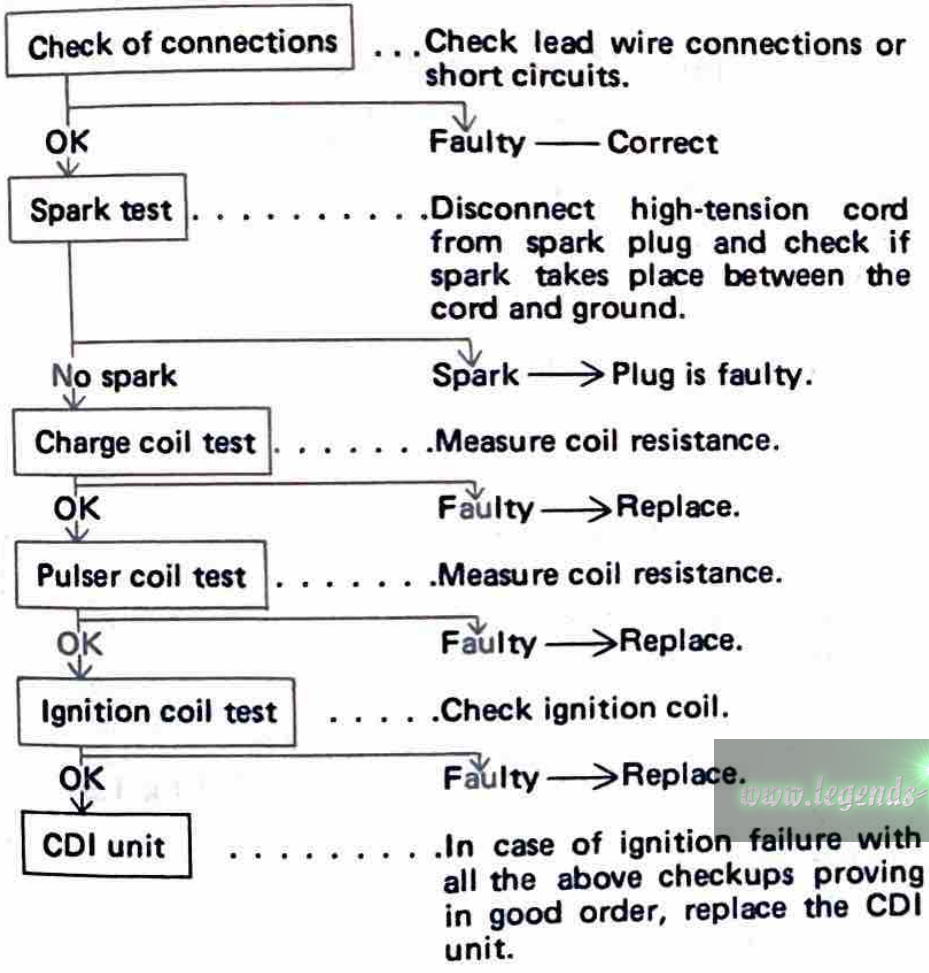
Wiring Diagram:
(YZ125F)



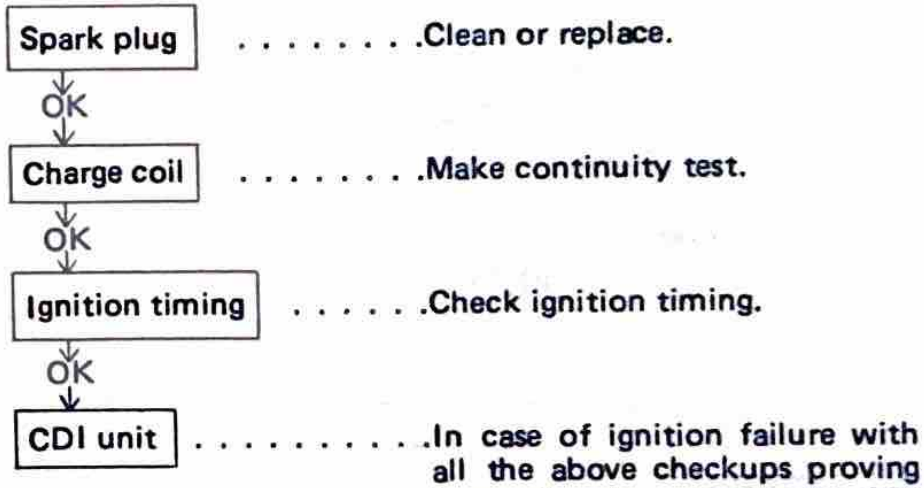
W/R	White/Red
B/W	Black/White
B	Black
O	Orange
Br	Brown
R	Red

Troubleshooting

1. No spark is produced or weak.



2. The engine starts but will no pick up speed.



SPECIFICATIONS

A. General

* .... YZ125F only

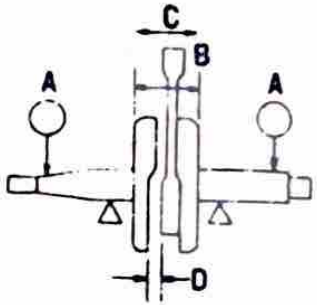
Dimensions:		
Overall length	2,040 mm (80.3 in)	*2,095 mm (82.5 in)
Overall width (Standard)	890 mm (35.0 in)	* 950 mm (37.4 in)
Overall height (Standard)	1,125 mm (44.3 in)	*1,165 mm (45.9 in)
Seat height	830 mm (32.7 in)	* 900 mm (35.4 in)
Wheelbase	1,365 mm (53.7 in)	*1,410 mm (55.5 in)
Minimum ground clearance	280 mm (11.0 in)	* 290 mm (11.4 in)
Weight:		
Net weight	83.7 kg (185 lb)	*88 kg (194 lb)

B. Engine

Description:		
Engine type	Air cooled 2-stroke gasoline Torque induction system	
Engine model	2W5	* 2X3
Displacement	98 cc (5.99 cu.in)	* 123 cc (7.52 cu.in)
Bore x stroke	50 x 50 mm (1.97 x 1.97 in)	* 56 x 50 mm (2.20 x 1.97 in)
Compression ratio	7.2 : 1	* 8.3 : 1
Starting system	Primary kick starter	
Ignition system	CDI magneto	
Lubrication system	Mixed gas 20 : 1	

Cylinder head:	
Combustion chamber volume	9.1 cc (0.56 cu.in) *10.4 cc (0.63 cu.in)
Combustion chamber type	Dome + squish
Head gasket thickness	0.5 mm (0.02 in) *1.0 mm (0.04 in)
Cylinder:	
Material	Aluminum alloy with cast iron sleeve
Bore size	50.000～50.020 mm (1.908～1.969 in) *56.000～56.020 mm (2.204～2.205 in)
Taper limit	0.05 mm (0.002 in)
Out of round limit	0.01 mm (0.004 in)
Piston:	
Piston skirt clearance	0.040～ 0.045 mm (0.0016～0.0018 in) *0.045～ 0.050 mm (0.0018～0.0020 in)
Piston measuring point	20 mm (0.8 in) from bottom of piston skirts *18 mm (0.7 in)
Additional value (Piston clearance)	0.020 mm (0.008 in)
Piston over size	50.25 mm, 50.50 mm, 50.75 mm, 51.00 mm (1.978 in), (1.988 in), (1.998 in), (2.008 in) *56.25 mm, 56.50 mm, 56.75 mm, 57.00 mm (2.215 in), (2.224 in), (2.234 in), (2.244 in)
Piston pin outside diameter x length	16 x 41 mm (0.63 x 1.6 in) * 16 x 47 mm (0.63 x 1.85 in)
Piston ring:	
Ring design	Plain
Ring end gap 1st	0.2～0.4 mm (0.008～0.016 in)
*2nd	*0.3～0.5 mm (0.012～0.0019 in)
Ring groove side clearance 1st	*0.3 ～0.5 mm (0.012～ 0.019 in) 0.03～0.07 mm (0.0012～0.0028 in)
*2nd	*0.04～ 0.08 mm (0.0016～0.0031 in) *0.03～0.07 mm (0.0012～0.0028 in)
Connecting rod bearing:	
Type	Needle bearing

Crankshaft:	
Assembly width (B)	55.90~ 55.95 mm (2.20~2.203 in)
Deflection (A)	0.03 mm (0.0012 in)
Big end side clearance (D)	0.2~0.7 mm (0.008~0.028 in)
Small end deflection (C)	0.8~ 2.0 mm (0.03~0.08 in)
Crank bearing type (L)	6205 C4SH
(R)	6304 C3SH
Crank oil seal type (L)	MHSA 25 x 40 x 8
(R)	MHSD 28 x 40 x 8
Clutch:	
Type	Wet, multiple disc type
Clutch push system	Inner push type, cam axle
Primary reduction ratio, method	74/19 (3.894), Helical gear *71/22 (3.227), Helical gear
Friction plate — Thickness/Quantity	3.0 mm (0.12 in) x 5 pcs.
— Wear limit	2.7 mm (0.11 in)
Clutch plate — Thickness/Quantity	1.2 mm (0.047 in) x 4 pcs. *1.2 mm (0.047 in) x 1 pc.
— Warp limit	0.05 mm (0.002 in) *2.0 mm (0.079 in) x 4 pcs.
Clutch spring — Free length/Quantity	36.0 mm (1.42 in) x 5 pcs. *34.0 mm (1.34 in) x 5 pcs.
— Wear limit	35.0 mm (1.38 in) *33.0 mm (1.30 in)
Clutch housing axle play	0.05 ~ 0.10 mm (0.002 ~ 0.004 in) *0.05~ 0.13 mm (0.002 ~ 0.005 in)
Push rod bending limit	0.15 mm (0.006 in)
Transmission:	
Type	Constant mesh, 6 speed forward
Gear ratio 1st (Teeth, Ratio)	32/13, 2.461
2nd	30/16, 1.875
3rd	27/18, 1.500
4th	25/20, 1.250
5th	24/22, 1.090
6th	23/23, 1.000



Gear oil quantity (Periodic change) (Overhaul)			650~ 750 cc (0.7~ 0.8 US. qt) 750~ 850 cc (0.8~ 0.9 US. qt)
Gear oil grade			SAE 10W/30 "SE" motor oil
Secondary reduction ratio, method			43/12 (3.583), Chain *51/12 (4.250), Chain
Shifting mechanism:			
Type			Guide bar
Pattern			1-N-2-3-4-5-6
Intake:			
Air cleaner	— Type		Wet-foam rubber x 2 pcs. * 1 pc.
	— Oil grade		SAE 10W/30 motor oil
Induction system			Reed valve
Reed valve:			
Type			V Type
Bending limit			0.3 mm (0.012 in)
Valve lift			8.1 ~ 8.5 mm (0.32 ~ 0.33 in)
Carburetor:			
Type/Manufacturer			VM30SS/MIKUNI * VM32SS/MIKUNI
I.D. mark			2W500 *2X300
Main jet	(M.J.)		# 200 * # 280
Air jet	(A.J.)		2.5 *2.0
Jet needle — Clip position	(J.N.)		6DP10-2 *6F22-3
Needle jet	(N.J.)		Q-2 *P-8
Cutaway	(C.A.)		2.0 *3.0
Pilot jet	(P.J.)		# 40 *# 60
Air screw turns out	(A.S.)		1-1/2 *1-1/2
Starter jet	(G.S.)		# 80 *# 80
Float arm height	(F.H.)		16.4 mm (0.646 in) *23.5 mm (0.925 in)

C. Chassis

Frame design:	Tubular, semi double cradle
Steering system:	
Caster	29° *29.5°
Trail	124 mm (4.9 in) *128 mm (5.0 in)
Lock to lock angle	98° *92°
Number and size steel balls — upper } Except for YZ125F	3/16 in x 22 pcs.
— lower } Except for YZ125F	1/4 in x 19 pcs.
*Head pipe bearing type	*Taper roller bearing
Front suspension:	
Type	Telescopic fork
Damper construction	Coil spring and oil damper *Coil spring and oil/air damper
Front fork travel	180 mm (7.1 in) *250 mm (9.8 in)
Front fork spring — Free length	572.5 mm (22.54 in) *589.5 mm (23.21 in)
— Wire D. x Winding D.	3.6 x 22.3 mm (0.14 x 0.88 in) *3.8x28.3 mm (0.15 x 1.11 in)
— Spring constant	K1 = 0.304 (0~ 85 mm) *K = 0.255
	K2 = 0.39 (85 mm~)
Inner tube outside diameter	32 mm (1.26 in) *36 mm (1.42 in)
Oil seal type	SD 32-44-10.5 *SD 36-48-10.5
Oil quantity/Grade	180 cc (6.1 oz)/Yamaha fork oil 10 wt, 20 wt
	*301 ± 4 cc (10.2 ± 0.14 oz)/Yamaha fork oil 10 wt, 20 wt
* Air pressure	*0.9 kg/cm² (12.8 psi)
Rear suspension:	
Type	Monocross
Damper construction	Coil spring, gas/oil damper
Gas properties	Nitrogen gas
Gas pressure	15 kg/cm² (213 psi)
Absorber stroke	89 mm (3.5 in) *138 mm (5.4 in)
Wheel travel	172 mm (6.77 in) *230 mm (9.06 in)

Compression spring — Free length	587 mm (23.1 in)	*304 mm (11.9 in)
— Set length	259 mm (10.2 in)	*299 mm (11.8 in)
— Spring constant	K1 = 3.759, K2 = 6.40	*K1 = 2.17, K2 = 3.75
— Number of windings	17.75 turns	*14.75 turns
— Spring diameter	9 mm (0.35 in)	*9.8 mm (0.39 in)
— Spring winding D.	57 mm (2.24 in)	*74.6 mm (2.9 in)
Swing arm free play	0 ~ 1 mm (0 ~ 0.04 in)	
Fuel tank:		
Capacity	5.2 lit (5.5 US. qt)	*6.1 lit (6.4 US. qt)
Fuel grade	Mixed gas 20 : 1 (Premium gasoline : Yamalube "R")	
Wheel:		
Tire size (F)	3.00-21-4PR/Inoue	
(R)	3.50-18-4PR/B.S.	*4.10-18-4PR/Inoue
Tire pressure (F)	1.0 kg/cm² (14 psi)	
(R)	1.2 kg/cm² (17 psi)	
Rim size (F)	1.60-21	
(R)	1.85-18	
Rim runout limit (F, R) Vertical	2 mm (0.08 in)	
Lateral	2 mm (0.08 in)	
Secondary drive:		
Type	Chain/DK520TR	
Number of links	97	*101
Chain free play	40~ 45 mm (1.57~ 1.77 in)	*10~ 15 mm (0.4~ 0.6 in)

Brake:	
Type	Leading, trailing
Drum diameter (F)	110 mm (4.33 in) *130 mm (5.12 in)
(R)	130 mm (5.12 in)
Shoe diameter x width (F)	110x25 mm (4.33x0.98 in) *130x22 mm (5.12x0.87 in)
(R)	130x28 mm (5.12x1.10 in)
Lining thickness (Wear limit)	4 mm/2 mm (0.16 in/0.08 in)
Shoe spring free length (F)	34.5 mm (1.36 in) *35 mm (1.38 in)
(R)	36.5 mm (1.44 in) *35 mm (1.38 in)

D. Electrical

Ignition system:	
Type	CDI magneto (Inner rotor) M100-24/Hitachi
Model/Manufacturer	
Pulser & charger coil (1) resistance: 20°C(68°F)	143Ω ± 10% (Brown-Red)
Charge coil (2) resistance: 20°C (68°F)	500Ω ± 10% (White/Red-Red)
Flywheel puller thread size	18 mm (0.71 in)
Ignition timing: (B.T.D.C.)	0.8 mm ± 0.15 mm (0.031 in ± 0.006 in) *1.1 ± 0.15 mm (0.043 ± 0.006 in)
Ignition coil:	
Model/Manufacture	CM61-20CY/Hitachi
Spark gap	6 mm (0.24 in)
Primary winding resistance	0.6Ω ± 10% at 20°C
Secondary winding resistance	6.2kΩ ± 20% at 20°C
Spark plug:	
Type/Manufacture	N-59G/Champion
Spark plug gap	0.7 mm (0.028 in)

CDI unit: Type/Manufacture	TIA 01-26/Hitachi

E. Tightening torque

Engine:			
Cylinder	— Nut	M8	2.5 m-kg (18 ft-lb)
	— Stud bolt	M8	2.5 m-kg (18 ft-lb)
Cylinder	— Nut	M10	3.8 m-kg (27 ft-lb)
	— Stud bolt	M10	4.5 m-kg (32 ft-lb)
Spark plug		M14	2.5 m-kg (18 ft-lb)
Primary drive gear		M12	6.0 m-kg (43 ft-lb)
Clutch boss		M14	5.0 m-kg (36 ft-lb)
Clutch spring		M5	0.6 m-kg (4 ft-lb)
Drive sprocket		M16	5.5 m-kg (40 ft-lb)
Kick crank		M8	1.5 m-kg (11 ft-lb)
Change pedal		M6	1.0 m-kg (7 ft-lb)
Reed valve		M3	0.07 m-kg (0.5 ft-lb)
CDI rotor		M12	5.5 m-kg (40 ft-lb)
Stator		M6	0.7 m-kg (5 ft-lb)
Exhaust pipe		M6	1.0 m-kg (7 ft-lb)
Chassis:			
Engine mounting bolt		M8	2.5 m-kg (18 ft-lb) *3.0 m-kg (22 ft-lb)
		M10	4.0 m-kg (29 ft-lb) *6.5 m-kg (47 ft-lb)

Handle crown	— Steering shaft (Pinch bolt)	M8	2.5 m-kg (18 ft-lb)
	— Steering shaft (Stem bolt)	M14	5.5 m-kg (40 ft-lb) *9.5 m-kg (69 ft-lb)
	— Inner tube	M10	3.5 m-kg (25 ft-lb)
	— Handle holder	M8	1.5 m-kg (11 ft-lb) *2.5 m-kg (18 ft-lb)
Front fork	— Cap bolt	M26	2.0 m-kg (15 ft-lb)
	— Damper unit	M10	2.0 m-kg (15 ft-lb)
Under bracket	— Inner tube	M8	2.0 m-kg (15 ft-lb)
Rear shock absorber	— Frame	M8	2.5 m-kg (18 ft-lb)
Pivot shaft		M12	4.5 m-kg (32 ft-lb) *M16 8.5 m-kg (61 ft-lb)
Front wheel axle		M10	4.0 m-kg (29 ft-lb) *M14 8.5 m-kg (61 ft-lb)
Rear wheel axle		M14	8.5 m-kg (61 ft-lb)
Sprocket wheel		M10	4.0 m-kg (29 ft-lb)

CONVERSION TABLES

Metric to Inch System		
KNOWN	MULTIPLIER (Rounded off)	RESULT
TORQUE		
m-kg	7.233	ft-lb
m-kg	86.80	in-lb
cm-kg	0.0723	ft-lb
cm-kg	0.8680	in-lb
WEIGHT		
kg	2.205	lb
g	0.0353	oz
FLOW/DISTANCE		
km/lit	2.352	mpg
km/h	0.6214	mph
km	0.6214	mi
m	3.2809	ft
m	1.0936	yd
cm	0.3937	in
mm	0.03937	in
VOLUME/CAPACITY		
cc	0.03381	oz (U.S. liq)
cc	0.06103	cu.in
lit	2.1134	pt (U.S. liq)
lit	1.057	qt (U.S. liq)
lit	0.2642	gal (U.S. liq)
MISC		
kg/mm	55.9970	lb/in
kg/cm^2	14.2233	psi (lb/in^2)
Centigrade (°C)	9/5(°C)+32	Fahrenheit (°F)

Inch to Metric System		
KNOWN	MULTIPLIER (Rounded off)	RESULT
TORQUE		
ft-lb	0.1383	m-kg
ft-lb	13.8313	cm-kg
in-lb	0.01152	m-kg
in-lb	1.1522	cm-kg
WEIGHT		
lb	0.4536	kg
oz	28.3286	g
FLOW/DISTANCE		
mi/gal	0.4252	km/lit
mi/h	1.6093	km/h
mi	1.6093	km
ft	0.3048	m
yd	0.9144	m
in	2.540	cm
in	25.40	mm
VOLUME/CAPACITY		
oz (U.S. liq)	29.577	cc
cu.in	16.385	cc
pt (U.S. liq)	0.4732	lit
qt (U.S. liq)	0.9461	lit
gal (U.S. liq)	3.7850	lit
MISC		
lb/in	0.01786	kg/mm
psi (lb/in^2)	0.07031	kg/cm^2
Farenheit (F)	5/9 (°F-32)	Centigrade (°C)

DEFINITION OF TERMS:

m-kg— Meter-kilogram: Usually torque. g — Gram.
kg — Kilogram: 1,000 grams.
km — Kilometer. lit — Liter: 1,000 cm^3
cm — Cubic centimeter: Volume or capacity.
km/lit — Kilometer per liter: Mileage.
kg/mm— Kilogram per millimeter: Usually spring compression rate.
kg/cm^2— Kilogram per square centimeter: Pressure;

CLEANING AND STORAGE

Cleaning

Frequent thorough cleaning of your motorcycle will not only enhance its appearance, but will improve general performance and extend the useful life of many components.

1. Before cleaning the machine:
   Block off end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.
2. If engine case is excessively greasy, apply degreaser with a paint brush. Do not apply degreaser to chain, sprockets, or wheel axles.
3. Rinse dirt and degreaser off with garden hose, using only enough hose pressure to do the job. Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brake drums, and transmission seals. Many expensive repair bills will result from improper high-pressure detergent applications such as those available in coin-operated car washes.
4. Once the majority of dirt has been hosed off, wash all surfaces with warm water and mild detergent-type soap. An old toothbrush or bottle brush is handy to reach those hard-to-get-to places.
5. Rinse machine off immediately with clean water and dry all surfaces with a chamois skin, clean towel, or soft absorbent cloth.
6. Immediately after washing, remove excess moisture from chain and lubricate to prevent rust.
7. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
8. Automotive-type wax may be applied to all painted and chrome-plated surfaces.

Avoid combination cleaner-waxes. Many contain abrasives which may mar paint or protective finish.

9. After finishing, start the engine immediately and allow to idle for several minutes.

Storage:

Long term storage (30 days or more) of your motorcycle will require some preventive procedures to insure against deterioration. After cleaning machine thoroughly, prepare for storage as follows:

1. Drain fuel tank, fuel lines, and carburetor float bowl.
2. Remove spark plug, pour about one tablespoon of 10W to 30W oil in spark plug hole and reinstall spark plug. Kick engine over several times (with ignition off) to coat cylinder wall with oil.
3. Remove drive chain. Clean thoroughly with solvent and lubricate with graphite-base chain lubricant. Re-install chain or store in a plastic bag (tie to frame for safe-keeping).
4. Lubricate all control cables.
5. Block up frame to raise both wheels off ground.
6. Deflate tires to 12 lb/in^2 (0.8 kg/cm^2)
7. Tie a plastic bag over exhaust pipe outlet to prevent moisture entering.
8. If storing in humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to rubber parts or seat cover.

NOTE:

Make any necessary repairs before storing the motorcycle.

WARRANTY INFORMATION

STATEMENT OF PURCHASER'S RESPONSIBILITY

This (model) Yamaha motorcycle is sold AS IS, WITHOUT ANY WARRANTIES EXPRESSED OR IMPLIED REGARDLESS OF THE INTENDED USE.
THE PURCHASER OF THIS MOTORCYCLE, which is intended for competition purposes, IS RESPONSIBLE FOR ALL COSTS OF SERVICE AND/OR REPAIR.

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