

**YAMAHA**

**TX650A**

**OWNER'S MANUAL**



**YAMAHA MOTOR CO., LTD.**

447-28199-10

## NOTICE

Yamaha Motor Company and its U.S. distributor, Yamaha International Corporation (Canada distributor; YAMAHA Motor Canada LTD.), are confident you will enjoy your new Yamaha to the utmost. We have made every effort to provide you with a safe, well engineered and constructed product. This Owner's Manual will acquaint you with several features and maintenance procedures concerning your Yamaha. However, if you are unfamiliar with the product, features or procedures outlined in this booklet we strongly urge you to consult your Authorized Yamaha Dealer for additional information. Please review your owner's warranty guide book thoroughly regarding your warranty obligation.

**TX650A OWNER'S MANUAL**

**1st Edition**

**AUGUST, 1973**

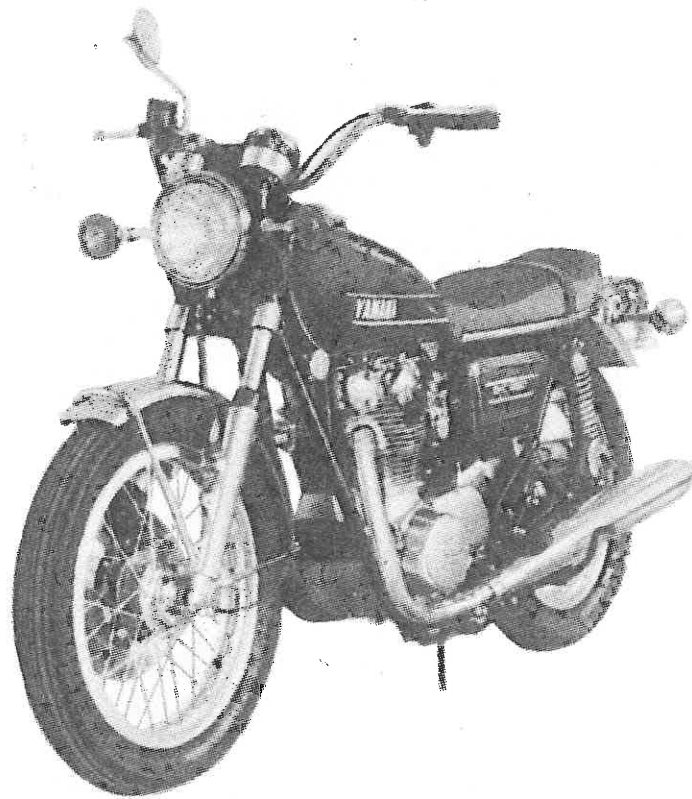
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**Yamaha International Corporation  
P.O. Box 6600, Buena Park, Cal.**

**P/N, LIT-11624-47-00**

## FOREWORD

It is our greatest pleasure that you are now a member of the Yamaha TX650A riders. The Yamaha TX650A, now ready for your use and service, is a motorcycle which has been manufactured by us under the strictest quality control in our Factory. Naturally, like any other model, proper handling, and daily inspection, adjustment and care are a prerequisite for a successful continuity of the top performance of this model. This Manual discusses these points to assist you in your best operation and handling of the Yamaha TX650A. Your perusal of the various items in this Manual is sincerely requested.

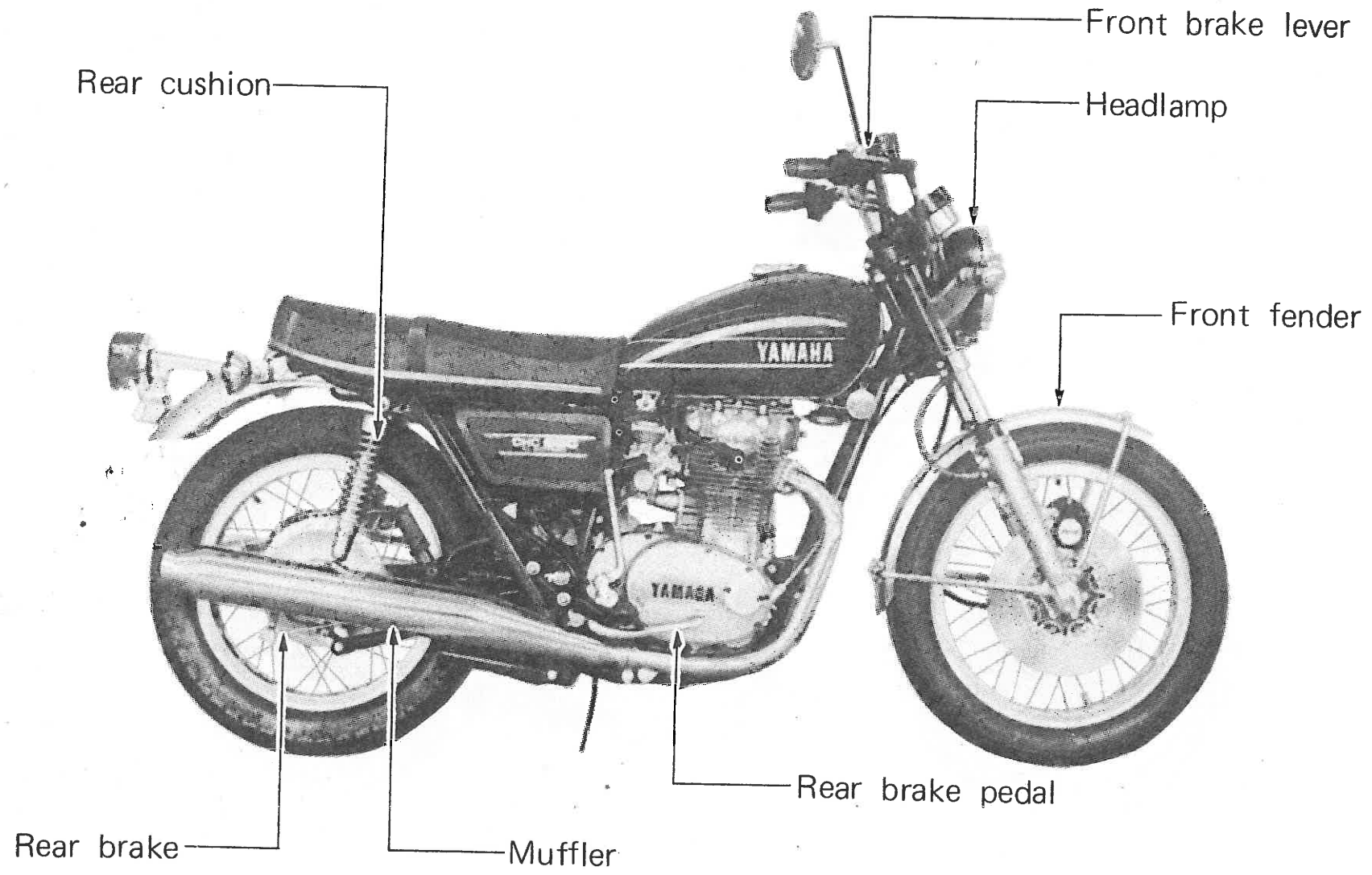


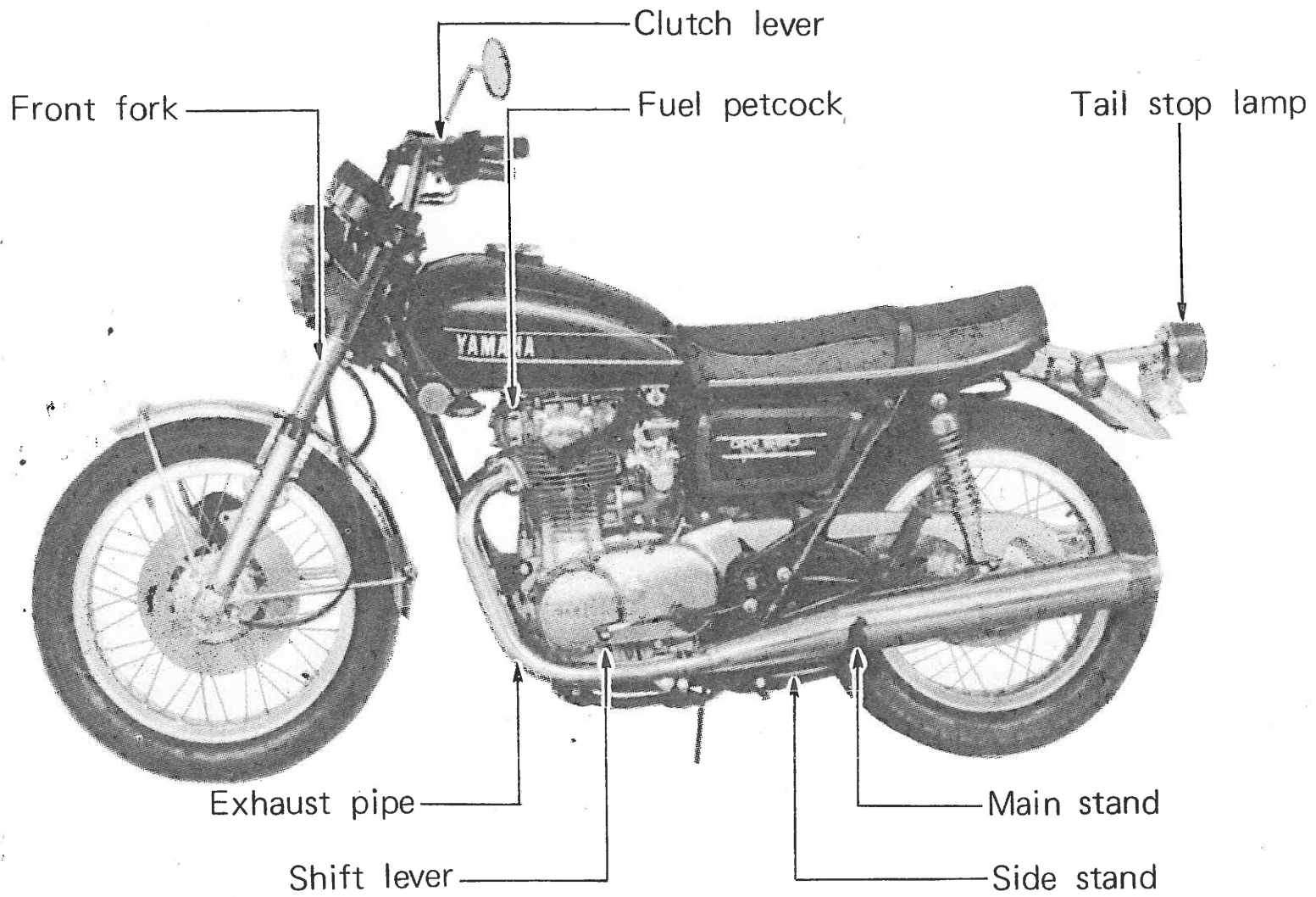
YAMAHA MOTOR CO., LTD.  
SERVICE DEPARTMENT

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## General view





## Features

### FOUR-CYCLE O.H.C. ENGINE

The Yamaha TX650A is equipped with Yamaha's first four-stroke, parallel twin cylinder, O.H.C. engine. This new engine has been developed fully utilizing Yamaha's experience in the manufacture of the four-stroke engines adopted for the Toyota 2000 GT and the Toyota 7.

The high-performance engine is mounted on a double-cradle type steel tube frame which features light weight and high rigidity. With a combination of high horsepower and well-balanced transmission, the TX650A exhibits outstanding acceleration which is essential to a large displacement, high-performance sportster.

#### 1. Performance

In order to increase the intake efficiency of the air-fuel mixture, the combustion chamber is hemispherical. In addition to over-sized valves, the SU type carburetor is employed. Consequently, engine performance is steady throughout the speed range from idling speed to high speed.

#### 2. Valve and camshaft mechanism

The valve mechanism employs the O.H.C. system which is most suitable for a high speed, high output engine. A single row endless chain is used as the cam drive. A chain guide and chain tensioner are employed to minimize the vibration and noise of the cam chain.

The control of vibrations stabilizes the valve action at high speed. In addition, double springs are used for the valves in order to prevent surging of the valves at high rpm's.

### **3. SU type carburetor with built-in starter**

The TX650A is equipped with SU type twin carburetors. This carburetor is equipped with a variable venturi. That is, the section area of the venturi automatically changes according to fluctuations of the negative pressure in the intake manifold. This type carburetor is capable of supplying fuel at the correct ratio according to the air flow throughout the speed range, thus assuring excellent acceleration. The built-in starter is most effective in starting the engine in cold weather.

### **4. Lubrication system with trochoid pump**

The oil pump is the trochoid type, driven by means of a crankshaft gear. A pressure-feed lubrication system is employed. The oil filter, made of long-lasting wire netting, is of a double-filtrating type, and thereby the wear of the engine will be effectively minimized.

### **5. Well-balanced 5-speed transmission**

Coupled with the well-balanced 5-speed transmission, the TX650A engine assures steady engine performance under any road conditions such as city streets, hills, high-speed highways, etc.

### **6. Well-proportioned frame and light weight**

The TX650A uses a double-cradle frame which is best suited to its high output, large displacement engine and thus features superiority in maneuverability, stability, and durability. The over-all weight is lighter than other makes in the same class; that is, weight per horsepower is the most effective.

### **7. Adoption of disc brake**

The large size disc brake has been adopted to ensure efficiency in steady braking both at low and high speeds and in rainy weather.



#### **8. Five-way adjustable rear suspension**

The TX650A uses a five-way adjustable rear suspension. The spring tension can be adjusted according to the rider's option and road conditions. The cushion stroke is 70 mm (2.75"). An oil lock system is employed as a shock-absorber and to prevent bottoming.

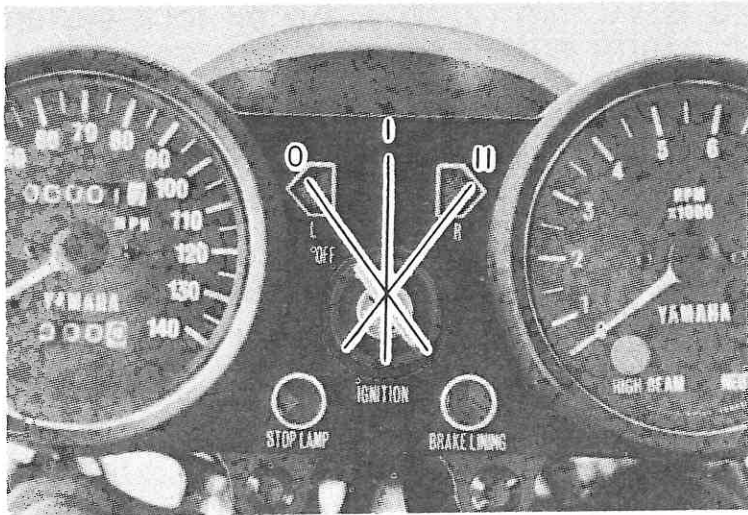
#### **9. Air cleaner**

A larger air cleaner is used compared with that for other motorcycles in the same class. The form rubber filter element has an oversize filtering area for improved air intake efficiency. Coupled with the SU type carburetor the superior acceleration and economy are ensured.

#### **10. Double-edged key**

The double-edged main switch key is designed to allow the rider to insert the key more readily.

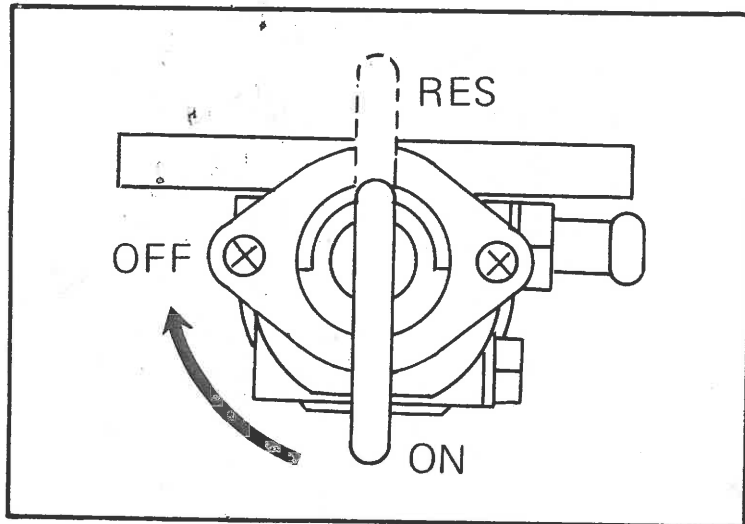
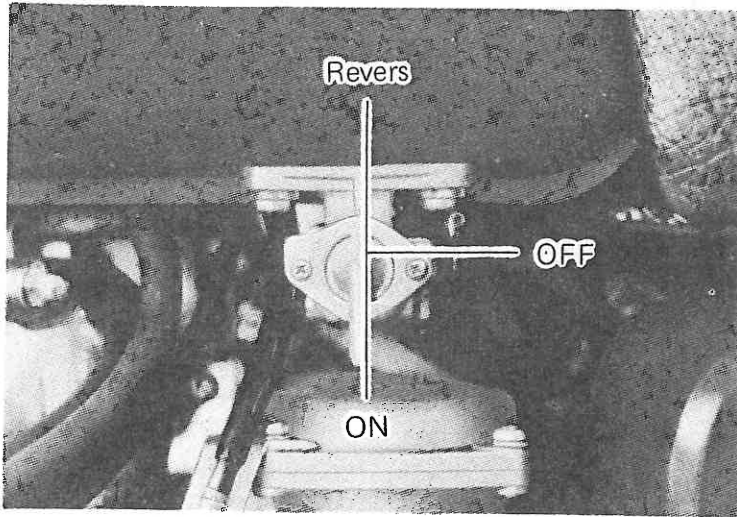
## Control Function



### 1. Main switch

The following chart shows the key position at which the lights, horn and ignition circuit are switched on or off: (The circle (O) denote "Switch on")

Parts Name	Key position			Instructions
	Off	I	II	
Engine		○		Kick the pedal or push the starter button.
Neutrallamp		○		When shifted to neutral.
Meterlamps		○		When light switch is turned on.
Headlamp		○		"
Taillamp		○	○	"
Stoplamp		○		When either brake is applied..
High beam indicator		○		When the headlight high beam is turned on.
Horn		○		Push the horn button.
Flasherlamps		○		Turn on left handlebar switch.



## 2. Fuel petcock

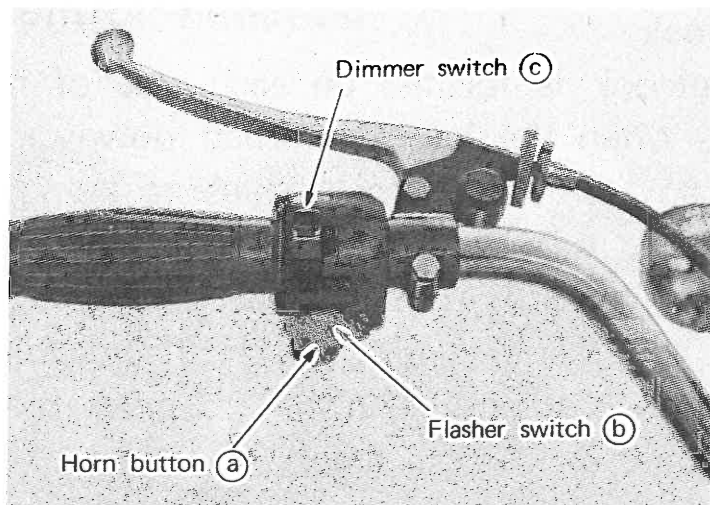
A fuel petcock is located on each side of the fuel tank. When the lever is turned downward, it is set to "ON", and fuel begins to flow. If the fuel stops flowing with the lever "ON", turn the lever to "RESERVE". The fuel remaining in the tank is 2.5 liters, with which the machine may travel a distance of 20 to 25 miles more before the tank becomes empty.

When parking or storing the machine, the fuel petcock levers should be set to "OFF".

The TX650A uses the same petcock on both sides of the fuel tank.

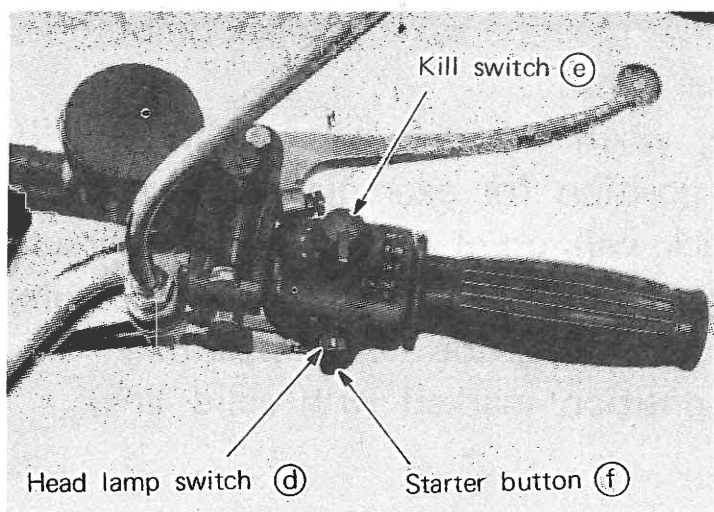
Therefore, when the petcocks are in the "RESERVE" position for example, the lever on the left petcock will point in an opposite direction from the lever on the right. The photograph shows a petcock in the "ON" position.

(Vertical position marked with solid line).

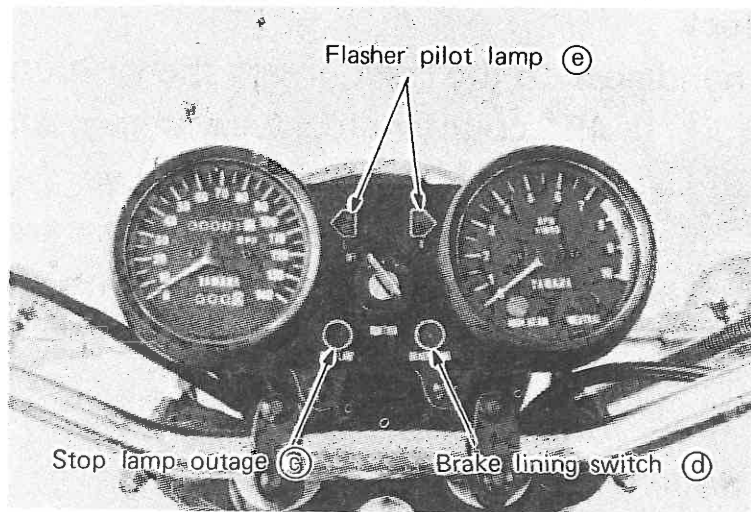
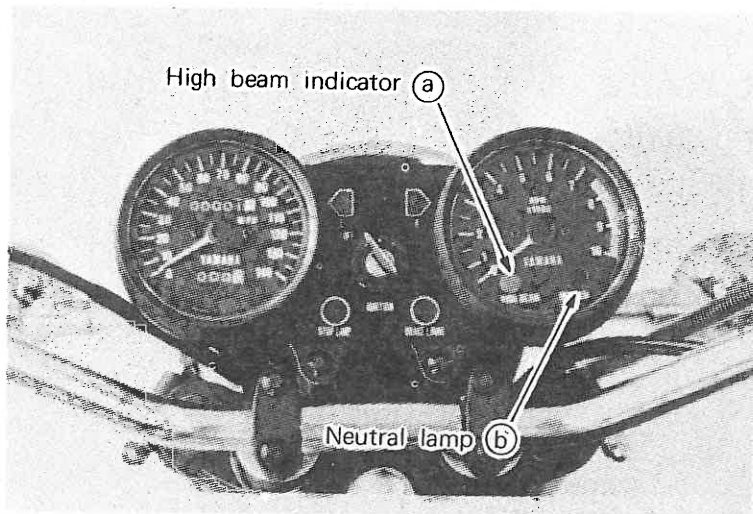


### 3. Handlebar switch & Horn button

- (a) Horn button – "HORN"  
To sound the horn, depress the horn button.
- (b) Flasher switch – "TURN"  
To signal a right turn, push the switch to the right. For left turns, push switch left.
- (c) Dimmer switch – "LIGHT"  
To raise the headlamp beam, pull the switch forward.  
To lower the beam, push the switch toward you.

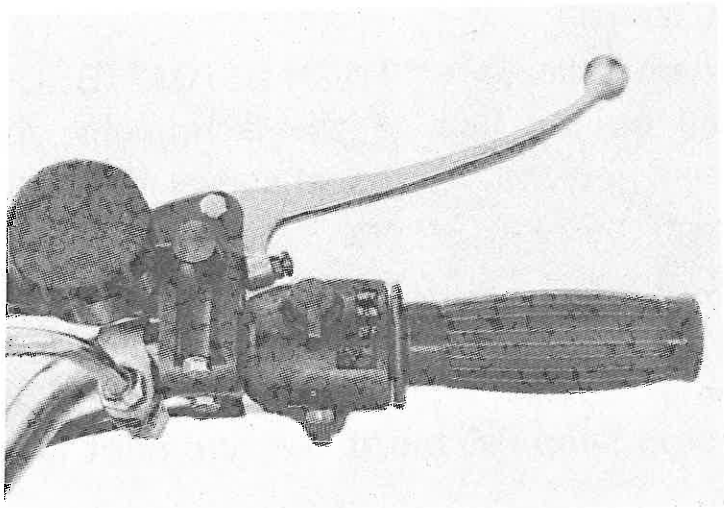


- (d) Headlamp switch  
To light the headlamp, taillamp, and meter lamps push the headlamp switch to the left.
- (e) Kill switch – "ENGINE STOP"  
Make sure that the "Kill" switch is on "RUN". The "kill" switch has been equipped to insure safety in an emergency such as when the motorcycle is upset or when trouble takes place in the throttle system.  
The engine will not start when the "kill" switch is turned to "OFF".
- (f) Starter button – "START"  
To start the engine, push the starter button.



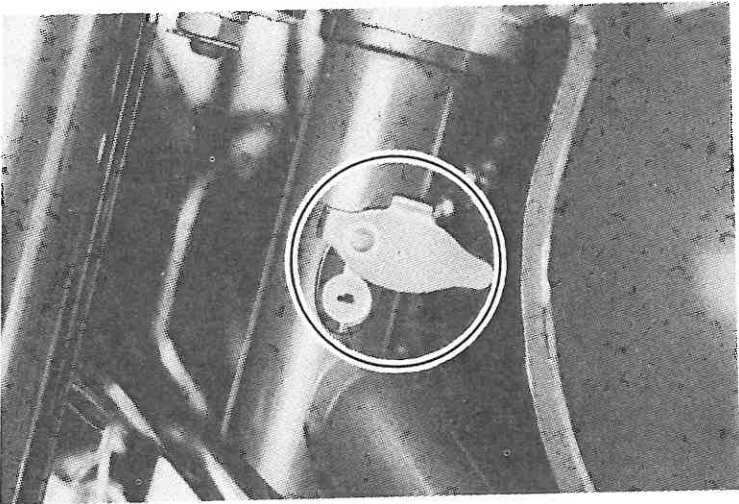
#### 4. Indication lamps

- (a) High beam indicator – “HIGH BEAM” (BLUE)  
 Mounted on the face of the tachometer the high beam indicator glows whenever the head-lamp high beam is in use.
- (b) Neutral lamp – “NEUTRAL” (GREEN)  
 Lights when transmission is in neutral.
- (c) Stop lamp outage – “STOP LAMP” (RED)  
 If the stop lamp has burnt out, the pilot lamp flashes.
- (d) Brake lining switch – “BRAKE LINING” (RED)  
 If the rear brake lining becomes less than 2 mm thick because of wear, the pilot lamp lights up.
- (e) Flasher pilot lamp (ORANGE)  
 When flasher switch is on, the pilot lamp flashes.



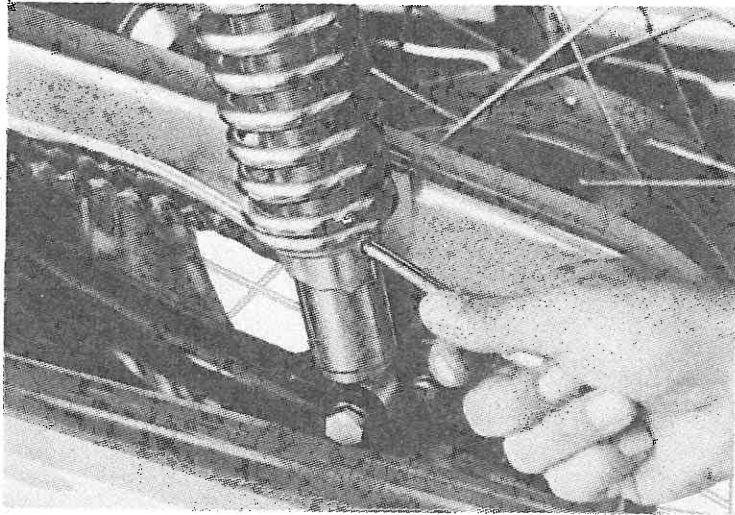
### 5. Front brake

The right handle lever controls the operation of the front brake. The front brake is of the disc and is adjustable at the lever adjustment will be explained later.



### 6. Steering lock

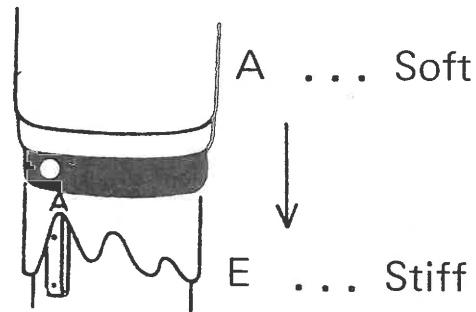
Turn the handlebar to the right, insert the ignition key and turn it 45° counter-clockwise then push the key and turn it 45° clockwise. Remove the key after checking to see that the front forks are securely locked. Be sure to lock your forks whenever you park. (See also, #2 Fuel petcock)



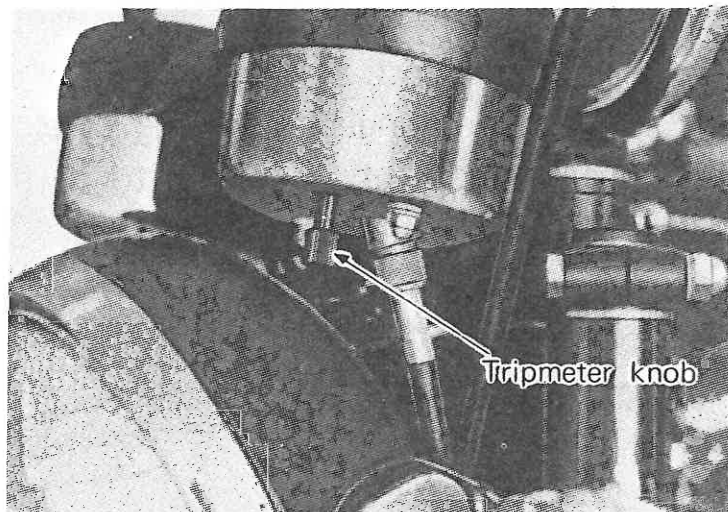
## 7. Rear cushion adjustment

Place machine on mainstand, insert screwdriver as shown, and turn it to change the spring rate. The rear suspension should be adjusted to fit the load, speed and road conditions.

Standard . . . . . A (5 positions)  
 Intermediate . . . . . }  
 Stiff . . . . . E

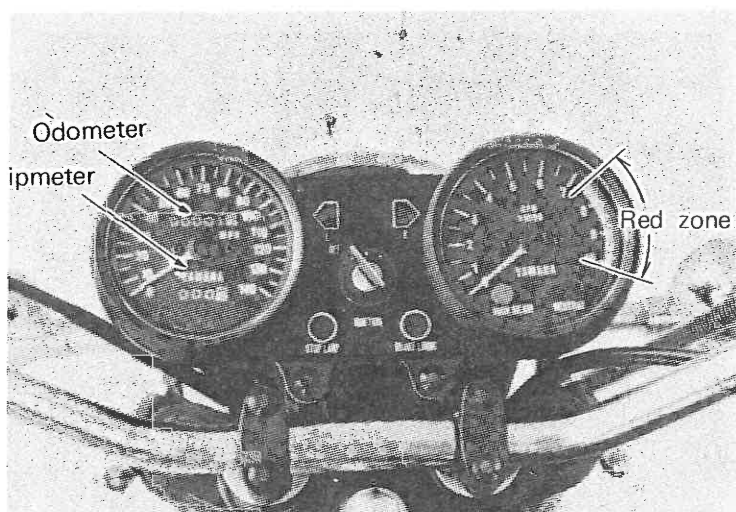


※Adjust both right & left cushions to the same position.



## 8. Tripmeter

A tripmeter is built into the speedometer shell. Twist the knob to reset the tripmeter.



## 9. How to read the tachometer

A tachometer is provided so that the rider can easily maintain engine RPM sufficient to keep the engine within the power curve. For maximum performance accelerate in each gear to 6,500 rpm or at most to 7,000 rpm before shifting. The best range for city driving is 3,500 to 4,000 rpm in lower gears. In this range the engine has ample power and yet is quite docile. Never lug your engine! (i.e. operate below 3,500 r.p.m.)

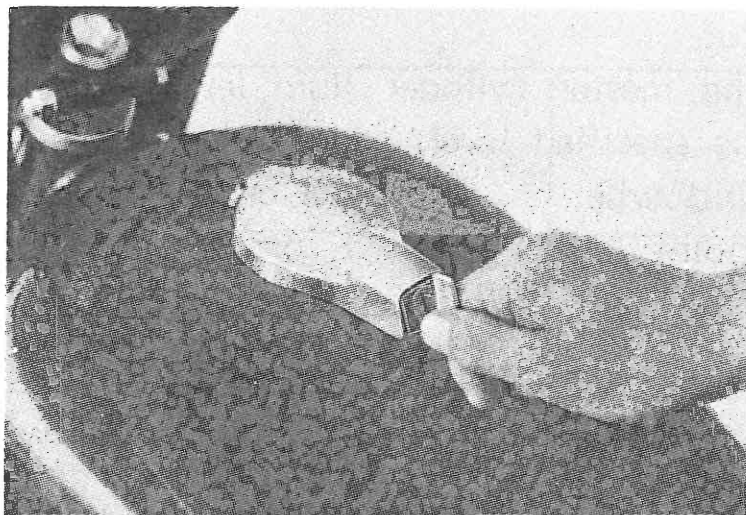
It is recommended not to use red-zone 7,500 - 10,000 rpm.

### **CAUTION:**

See "Break-in" section for additional information.

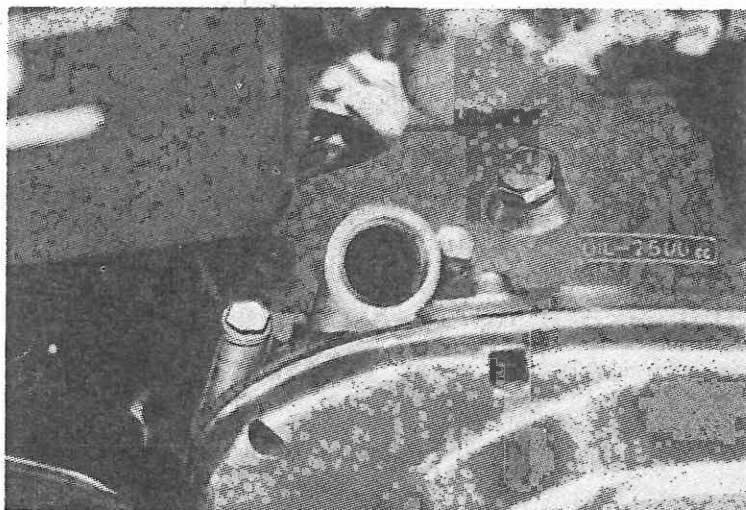


## Basic Instruction



### 1. Gasoline

Use fuel with an octane rating of 90+. Some regular fuels and most mid-range have 90+ octane ratings. Ethyl grade fuels usually have octane ratings in excess of 100. In addition, they have considerable tetra-ethyl lead added which can cause spark plug problems. Whenever possible, use a fresh, name, brand, gasoline low lead rating.



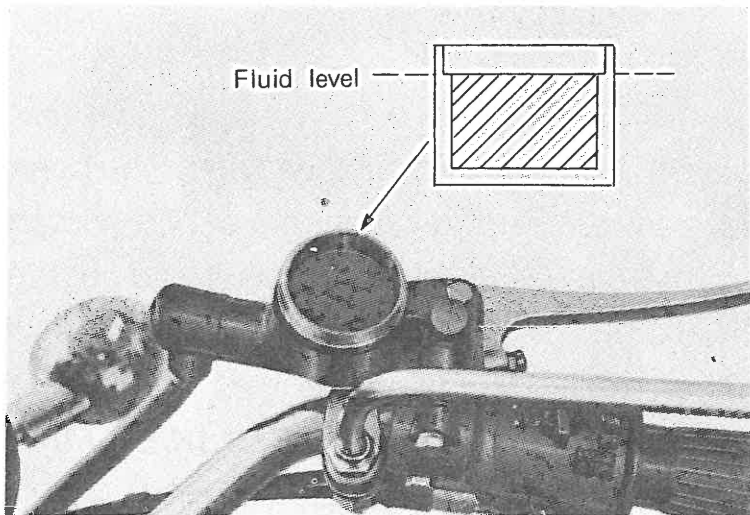
### 2. Oil

The quality of oil affects the life of the engine and therefore, the oil should be good quality and replaced at specified intervals.

Oil type: SAE "SE"  
Viscosity: SAE 20W - 40  
Amount: 2500 cc (2.6 qts.)

#### Note:

See operating instructions regarding oil replacement and level check.



### 3. Checking the Front Brake Fluid

If the brake fluid level becomes low, brake failures may occur.

Check the master cylinder fluid level. If it is below the specified level, add fluid.

Brake fluid type: DOT #3 or #4

Boiling point: 464° F or better

#### Important Note:

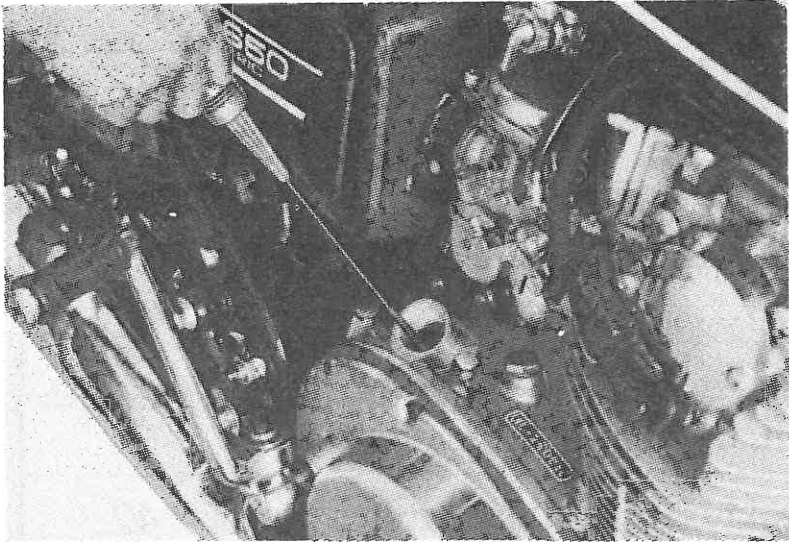
1. Do not allow any brake fluid to contact painted surfaces, plastic parts or rubber parts or they will be damaged.
2. If the brake fluid level decreases rapidly; have your Yamaha dealer check the brake immediately.
3. Avoid using any brake fluids other than those meeting DOT #3 or #4 specifications.
4. Avoid mixing the brake fluid with other makes. Chemical reactions may occur, causing brake troubles.
5. When adding brake fluid, take care not to allow any water to enter.

## PRE-OPERATION CHECK CHART

ITEM	ROUTINE	PAGE
BRAKES	Check Operation/Adjustment/Hyd. Reservoir	16,34
CLUTCH	Check Operation/Lever Adjustment	32
ENGINE OIL	Top-off as required	46
DRIVE CHAIN	Check Alignment/Adjustment/Lubrication	40
BATTERY	Check Electrolyte Level Weekly/Top-off Monthly	42
SPARK PLUG(S)	After Break-in Check Color/Cond'n. Weekly/1,000 mi.	48
AIR FILTER(S)	Foam Type Must be clean	47
WHEELS & TIRES	Check Pressure/Runout/Spoke tightness/Axle nuts	35 - 38
FITTINGS/FASTENERS	Check All Tighten as necessary	31
LIGHTS/SIGNALS	Check Headlamp/Tail-stop lamps/Turn signals, etc.	10

Preoperation 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.

## Operation



### 1. Before starting

Before you start for a ride you should check several points for safety. In particular:

- a Do you have enough fuel?
- b Do you have enough oil?

If the amount of the engine oil is insufficient or the oil is contaminated, moving parts and rotating parts will be quickly worn.

(Refer to "Basic Instructions" and "Servicing".)

- c Are your tire pressures correct?

Incorrect tire pressures affect the comfort, handling, acceleration and life of tires. Incorrect tire pressures can also lead to accidents!

	Front tire	Rear tire
Normal riding	23 lbs/in <sup>2</sup> (1.6 kg/cm <sup>2</sup> )	28 lbs/in <sup>2</sup> (2.0 kg/cm <sup>2</sup> )

**Note:** When you run the machine at 100 mph (175 km/h) or more, the tire pressure should be 20 percent more than specified.

- d Do both brakes and the stop lamp work?
- e Are the lamps and horn working in order?

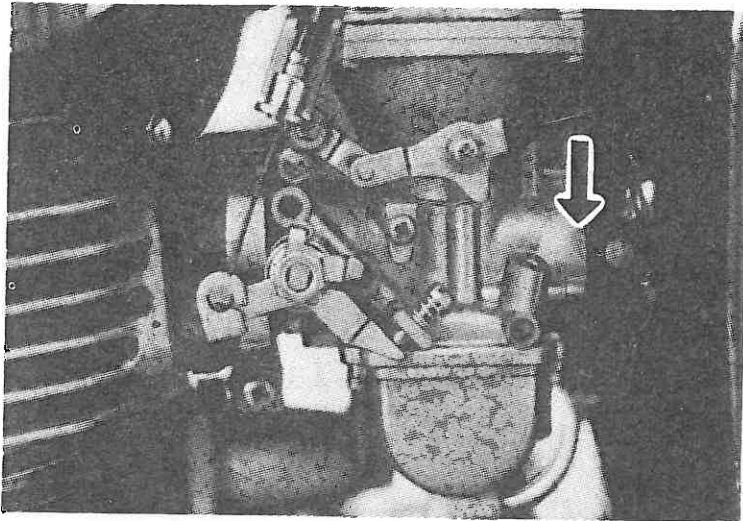
Check the headlamp, taillamp, meterlamps, and indicating lamps. The few minutes you save by not checking are not worth being stranded without lights!

## 2. Starting

- a Turn the fuel pet cock levers to the "ON" position.
- b Insert the ignition key and turn it to the #1 position.
- c Shift transmission to neutral.
- d Check "KILL" switch position and throttle operation.

### Note:

The TX650A Electric Starter can be used in any gear, provided the clutch is dis-engaged.



### A Starting in cold weather

Most engines are difficult to start in cold or freezing weather.

YAMAHA Motorcycles however, use a carburetor with a built in starter jet that gives a richer mixture for easier cold weather starting.

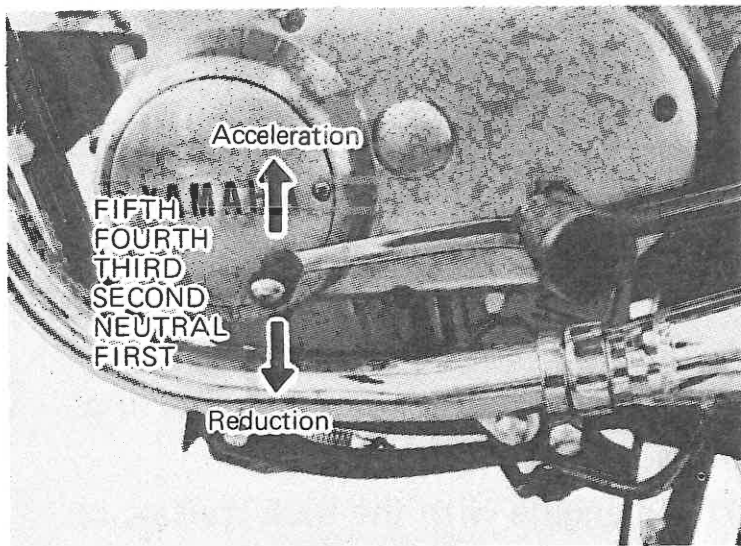
- a Depress the starter lever.
- b Start the engine with the kick starter, or electric starter, keeping the throttle closed.

### B Starting when your engine is warm

When your engine is warm, after riding or in warm weather, don't use the starter lever. Open the throttle slightly ( $\frac{1}{4}$  turn or less) and kick the starter, or use the electric starter.

## C Warming up

To get maximum engine life, always "warm up" the engine for a few minutes before starting off. Never accelerate hard with a cold engine! To see whether or not the engine is warm, see if it responds to throttle normally. Don't forget to raise the starter lever after the engine is warm. Never "Rev" the engine excessively while in neutral or with clutch dis-engaged.



## 3. Shifting and Acceleration

TX650A has a 5-speed transmission. The transmission allows you to control the amount of power you have available at a given speed or starting, accelerating, climbing hills, etc.

The use of the gear lever is illustrated at the left.

To shift into NEUTRAL, depress the gear lever to the end of its travel (you will feel a stop when you are in low gear), then raise it slightly.

If you are in neutral, the green lamp in the tachometer will light when the ignition switch is on.

- a. Pull the clutch lever to engage the clutch.
- b. Shift into FIRST gear.
- c. Open the throttle gradually, and, at the same time, release the clutch lever slowly.
- d. At 10 to 15 mph, close the throttle, and at the same time pull in the clutch lever quickly.

- e. Shift into SECOND. Be careful not to shift into neutral.
- f. Open the throttle part way and gradually release the clutch lever.
- g. To accelerate or decelerate, use the same procedure, to shift into THIRD, FOURTH, and FIFTH gears.
- h. Except for competition or high speed driving, shift so that the engine speed remains between 3,500 ~ 4,500 rpm. This is the optimum operating range for the engine.

**a Going Uphill**

When starting to climb a gentle grade, open the throttle little by little to avoid losing engine speed and power.

When climbing a steep grade, shift down (for example) from THIRD to SECOND or from SECOND to FIRST as required.

**b Going Downhill**

On a long down grade or sharp descent, don't rely on the brakes alone, but use the engine compression as a brake: shift into THIRD or SECOND as required by the grade and close the throttle.

**CAUTION:**

Never attempt to turn off the ignition switch on a long hill.  
This may cause the spark plug to foul, in addition to being unsafe.

#### 4. Stopping

There are several ways to stop.

Pulling in the clutch lever and twisting the throttle grip in the closed direction will permit you to gradually glide to a stop. Downshifting through the gears, using the drag of the engine to slow down is another. However, the best method, and the one most universally used, is to use both engine compression (downshifting through the gears as the machine slows) and the front and rear brakes.

When stopping, gradually apply the rear brake while twisting the throttle grip in the closed direction. After the rear brake starts to take hold, gradually apply the front brake.

As the machine continues to slow shift down through the gears using engine compression to aid the slowing effect. When shifting down, watch the tachometer to see that the engine does not over-revolution.

##### Note:

During periods of inclement weather, snow, rain, sleet, or ice, or on poor road surfaces where traction is minimal, or in a sharp corner, IT IS NOT ADVISABLE TO FIRMLY APPLY THE FRONT BRAKE. While it is true that the front brake supplies the greater portion of braking power, it is also true that stability can be upset very easily if it is used incautiously under the above conditions.

#### 5. Cruising

A frequently asked question is "What rpm should I cruise at?"

The BREAK-IN section provides limitations when the motorcycle is new, but once the engine has been broken in, then we suggest that you follow these guide lines. For sustained load and throttle conditions, such as those encountered on open highways, cruise at  $\frac{3}{4}$  throttle or at  $\frac{3}{4}$  of the rpm "red line", whichever comes first. Always bear in mind though, the maximum allowable speed limit for the area through which you are riding. This is a recommendation, not a "hard and fast" rule.



Any modification or personalization of the running gear could possibly change the operating range most comfortable and most efficient for the engine.

## 6. Break-in

THERE IS NEVER A MORE IMPORTANT PERIOD, IN THE LIFE OF YOUR TX650A THAN THE PERIOD BETWEEN ZERO AND FIVE HUNDRED MILES. For this reason we ask that you carefully read the following material.

Because the engine is brand new, you must not put an excessive load on it during the first several hours of running. You could look at it in this manner: During the first 500 miles the various parts in the engine wear and polish themselves to the correct operating clearances. During this period prolonged full throttle operation, or any condition which might result in excessive head and cylinder temperatures, must be avoided. However, momentary full throttle operation, under load, (2-3 seconds maximum) does not harm the engine. Each full throttle acceleration sequence should be followed with a substantial rest period for the engine by cruising at lower rpm's so the engine can rid itself of the temporary build up of heat. The method for breaking in an TX650A is quite simple. (See following page.)

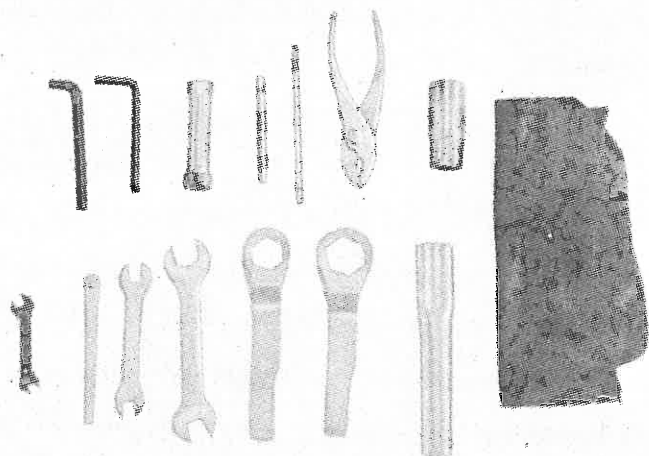
## reak-in (continued)

- a 0 to 300 miles: Avoid operation above 3,500 rpm.  
Allow a cooling off period of five to ten minutes after every hour of operation.  
Vary the speed of the motorcycle from time to time. Do not operate it at one, set, throttle position.
  
- b 300 to 500 miles: Avoid prolonged operation above 4,000 rpm.  
Allow the motorcycle to rev freely through the gears but do not use full throttle at any time.
  
- c 500 miles and beyond: Avoid prolonged full throttle operation.  
Avoid engine speeds in excess of 5,000 rpm. Vary speeds occasionally.

### Note:

See Lubrication and Maintenance charts for initial 250, 500, 1000, and 2000 mile service.

## Service Tools



The servicing information included in this manual is intended to provide you, the owner, with the necessary information to provide a means of doing your own preventive maintenance and minor repairs.

The tools provided in the owner's tool kit are sufficient for this purpose, except that a torque wrench is also necessary to properly tighten nuts and bolts.

(See torque chart, P.27.)

Should you desire additional service information on your TX650A a copy of the Service Manual can be purchased from any Authorized YAMAHA Dealer or direct from the Literature Department, Yamaha International Corp., P.O. Box 6600, Buena Park, Calif. (90620). (Canadian Distributor: Yamaha Motor Canada Ltd., 1350 Verdun Place Richmond, B.C., Canada)

## Lubrication and Maintenance Charts

These charts should be considered strictly as a guide to general lubrication and maintenance periods. 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 the ravages of water on metal parts. If you are in doubt as to how closely you can follow these time recommendations, check with the YAMAHA dealer in your area.

# Lubrication Intervals

Page	Item	Remarks	Type	initial (milies)				Thereafter Every (miles)			
				250	500	1000	2000	1000	2000	4000	
45	Engine Oil Change	preope check	Warm engine before draining	#1	0	CHK	CHK	0	CHK	0	
39,40	Drive Chain		Lube/Adjust as required	#2	See Notes						
39,40	Drive Chain		Remove/clean/lube/adjust	#2				0		0	
31	Control & Meter Cables		All-apply thoroughly	#3			0	0		0	
42	Throttle Grip & Housing		Light Application	#4				0		0	
Dealer	Tach & Speed Gear Hsgs.		Light Application	#4				0			0
---	Rear Arm Pivot Shaft		Zerk-Apply until shows	#5			0			0	
---	Brake Pedal Shaft		Light Application	#4			0			0	
---	Change Pedal Shaft		Light Application	#4			0			0	
---	Stand Shaft Pivot (s)		Light Application	#4			0			0	
49	Front Forks		Drain com./chk. spec.	#2		CHK		0			0
Dealer	Steering Ball Races		Inspect thoroughly/med. pack	#6				0		CHK	0
Dealer	Point Cam Lubr. Wick		Very light application	#7			0				0
16	Hyd. Brake Fluid Res.		See Notes	#8	CHK		CHK		CHK		8000
Dealer	Wheel Bearings		Do not over-pack	#6				0			0

(continued)

## Recommend Lubricants (from chart on P.26)

- #1. For average operation at ambient temperatures of 30 - 90° F. use SAE 20W-40 type "SE" motor oil.
- #2. Use SEA 10W-30 type "SE" motor oil. (If desired, specialty type lubricants of quality manufacture may be used.)

### Note:

Drive chain must be lubricated every 200 - 250 miles. If unit is subjected to extremely hard usage, chain must be inspected constantly and serviced as required.

- #3. Use SAE 10W-30 type "SE" motor oil (If desired, or at ambient temperatures below 30° F., a graphite base "dry" lubricant of quality manufacture may be used.)
- #4. Light duty: Lithium soap base (white) grease. Heavy duty: Standard 90 wt. lube grease (Do not use 90 wt. lube grease on throttle/throttle housing.)
- #5. Use standard 90 wt. lube grease - - smooth, not coarse.
- #6. Medium-weight wheel bearing grease of quality manufacture - - preferably waterproof.
- #7. Light-weight machine oil.
- #8. Change yearly or 8,000 miles. Use quality brake fluid equivalent to DOT #3 or #4 specifications. Keep clean. Do not allow water, etc., to contaminate. Do not mix types when adding.

## Periodic Maintenance Intervals

Page	Item	Remarks	Initial (miles)				Thereafter Every (miles)	
			250	500	1000	2000	1000	2000
33	Brake System (complete)	Check/Adj. as req'd. - repair as req'd.		0	0		0	
31	Clutch	Check/Adjust as required		0	0	0		0
41	Battery	Top-ff/Chk. spec. gravity monthly, or	0		0		0	
48	Spark Plug (s)	Inspect/Clean or replace as req'd	0	0	0		0	
34~38	Wheels & Tires	Pressure/Spoke - Tension/runout	0	0	0		0	
30	Fittings & Fasteners	Tighten before each trip and/or	0	0	0		0	
39,40	Drive Chain	Tension/Alignment #1	0	0	0		0	
45	Engine Oil Level Check	Unit level/Engine warm	0	0	0		0	
46	Air Filter	Foam type - See service notes #2	0	0	0	0		0
44	Fuel Petcock (s)	Clean/flush tank as required	0		0	0		0
47	Ignition Timing	Adjust/clean or replace pts. as req'd		0	0	0		0
42,43	Carburetor Adjustment	Check operation/synch./fittings		0	0	0		0
42	Carburetor Overhaul	Clean/repair as req'd./refit/adjust						4000
Dealer	Cylindr Compression	Preventive Maintenance Check		0	0	0		0
45	Camshaft Drive Chain	Adjust Tension	0		0	0		0
44	Oil Filter Element	Clean			0	0		0
Dealer	Valves	Adjust/regrind as required			0	0		0

ALSO PREOPERATION CHECK

## **Service Notes:**

- #1. DRIVE CHAIN: In addition to tension and alignment, chain must be lubricated every 200 - 250 miles. If unit is subjected to extremely hard usage, such as racing or dirt riding, chain must be checked constantly. See "Lubrication Intervals" for additional details.
- #2. AIR FILTER: Must be clean at all times to function properly. Remove and clean filter at least once per month or every 2,000 miles; more often if possible.

### **Note:**

If unit is subjected to extremely hard usage, such as dirt riding, etc., clean filter daily.

## A Note To The Owner

Periodic Maintenance and Lubrication Interval charts are included within this manual to provide you with the necessary information for appropriate preventive maintenance. If any procedure in the charts is not completely understood, or not covered in this manual, please consult your Authorized Yamaha Dealer for the necessary service.

In some instances, failure to have the machine properly serviced by your dealer will void the Warranty on your machine. Therefore, it is most important to study the charts, this manual, and your Warranty obligations most carefully.

## SERVICE DEPARTMENT

### Torque

All fittings require a minimal amount of torque during tightening to keep them from vibrating loose. Excessive tightening will only lead to stripped threads and broken studs.

As a rule of thumb, use the following tightening chart:

STUD SIZE	TORQUE
6mm	90 in/lbs.
7 mm	135 in/lbs.
8 mm	180 in/lbs.
10 mm	300 - 350 in/lbs.
12 mm	350 - 400 in/lbs.
14 mm	400 - 450 in/lbs.
Axle Nuts	500 - 600 in/lbs.
Spark Plugs	230 - 250 in/lbs.

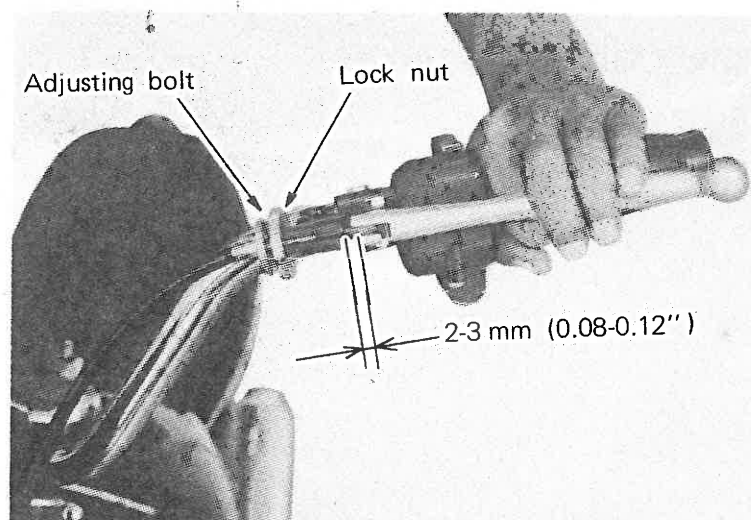


## Servicing

### 1. Clutch cable

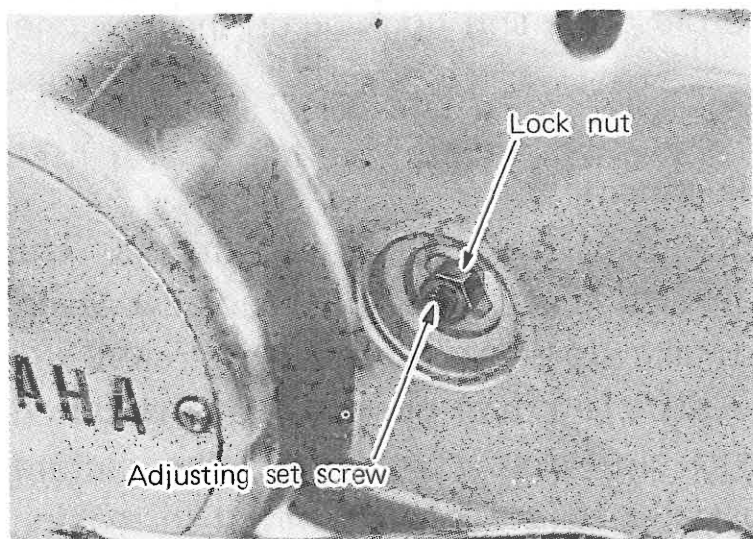
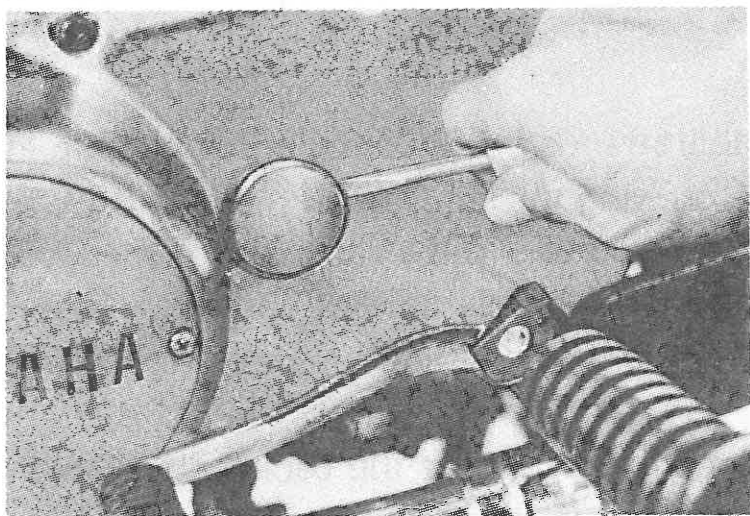
The clutch cable requires periodic lubrication to prevent the cable strands from rusting or hanging up in the casing. First, disconnect the cable from the clutch lever by screwing the adjuster all the way back to the cable casing. This will provide enough free play, in the cable for you to slip the cable out of the lever holder through the slot in the lock nut, adjuster, and holder. Hold the cable upright and allow several drops of lubricant to flow down the cable. Hold the cable upright for several minutes to permit complete lubrication.

If the cable needs to be replaced, then perform the steps above and disconnect the cable at the lever. Next, disconnect the cable at the engine. Begin by taking off the cover that houses the clutch activating mechanism (left side of the engine). Looking at the inside of this cover, you will see the clutch actuating arm. Push the arm up and lift the cable end off. Removing the old cable and hooking up the new one will take but a few moments.

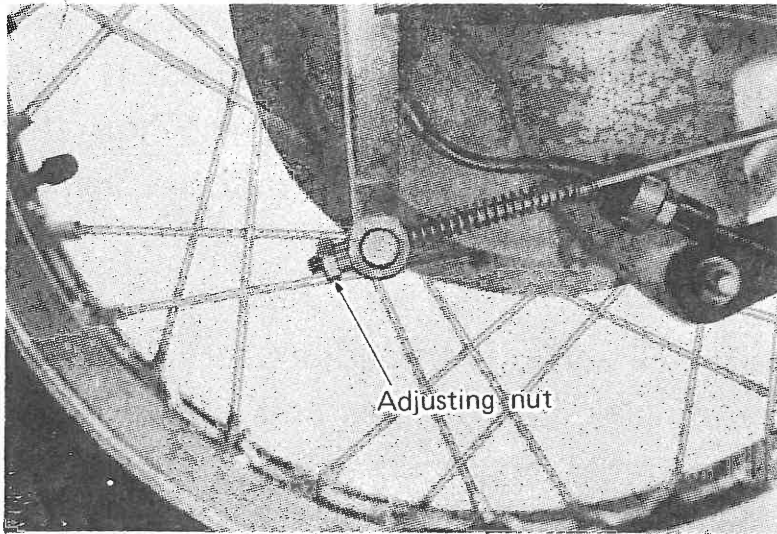


### 2. Clutch adjustment

The TX650A has two clutch adjustments. The first adjustment, located at the handlebar lever, is used to take up slack from cable stretch and to provide sufficient free play so that the clutch engages and disengages completely. The picture below illustrates all the parts involved in making the adjustment.



- a First, loosen the lock nut. Then turn the adjuster either in or out depending on which direction is necessary to arrive at 2-3mm ( $1/16''$   $1/8''$ ) free play.
  
- b The second adjustment is located behind the adjusting cover. Removing the cover will expose the adjusting set screw and lock nut. Loosen the lock nut, rotate the set screw in until it lightly seats against a clutch push rod that works with the set screw to operate the clutch. Back the set screw out  $1/4$  turn and tighten the lock nut. This adjustment must be checked because heat and clutch wear will affect this free play, possibly enough to cause incomplete clutch operation.



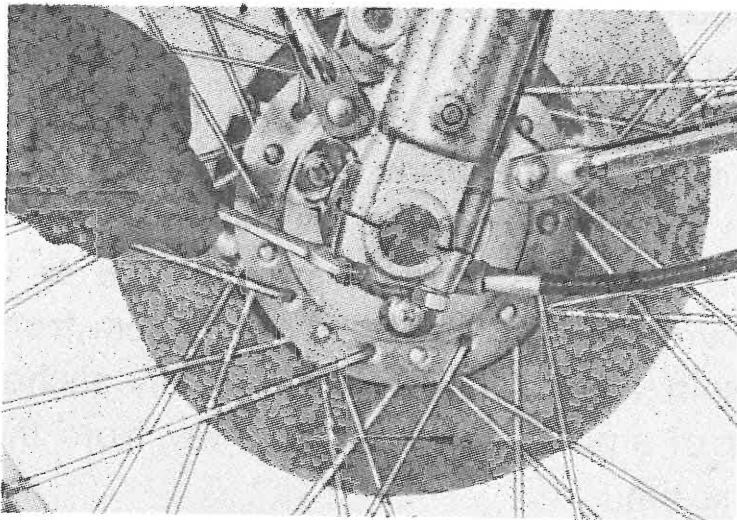
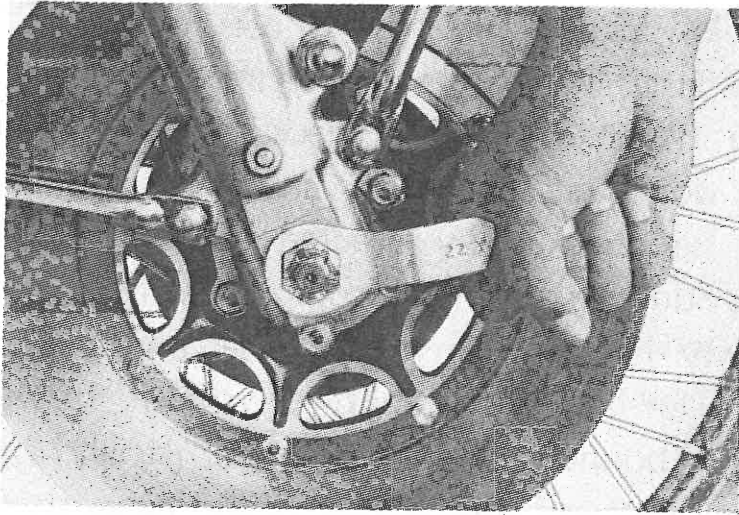
**Note:**

Have your dealer inspect the brake linings for wear and clean the brake shoes and drums every 2,000 miles (3,000 km). Always keep the shoes and drums free of oil. Rear brake adjustment should be performed any time the wheel is moved or removed.

**CAUTION:** See P.37 Rear wheel removal.

**5. Front wheel:**

Work that might need to be done on the front wheel assembly includes tire or tube exchange, hub/spokes/rim assembly replacement maintenance and inspection. The following are the steps necessary to dismantle the front wheel, step by step, and you should proceed with the steps until you have removed the part to be replaced. You as the owner, can replace everything but the disc, spokes or the rim. To individually replace spokes or rim requires that the spokes be "replaced". This should be done by a competent dealer as the spokes must be positioned and torqued correctly. If not done properly wheel alignment will not be correct and steering will be negatively affected.



## 6. Front wheel removal

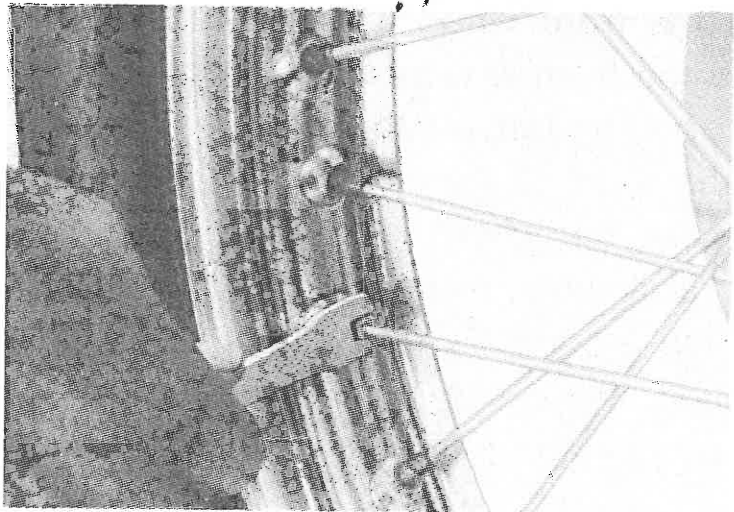
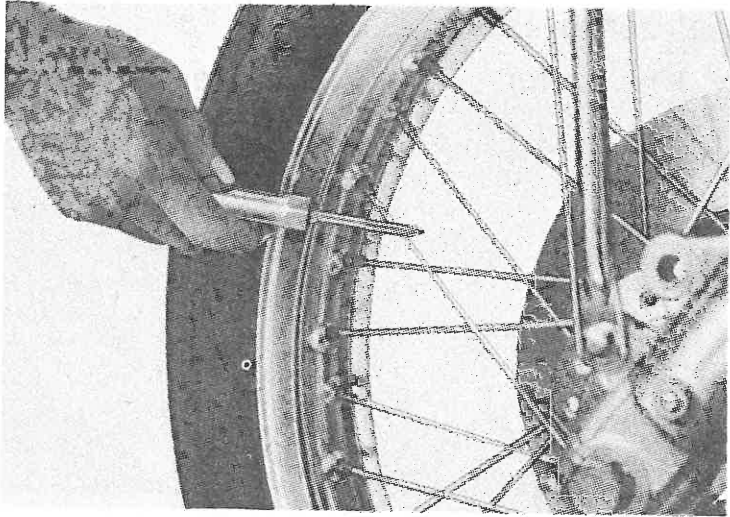
a Remove the cotter pin and remove the wheel nut.

b Loosen the front wheel axle pinch bolts.

c Remove the front axle by simultaneously twisting and pulling out on the axle.

d Brace the front of the machine off the ground and remove the wheel assembly.

e During reassembly, make sure the speedometer torque tab is correctly positioned, the axle nut is torqued, the pinch bolts are torqued, and a new safety cotter pin is installed-in that order.



## 7. Rims, spokes, front and rear wheels

There are also checks that you can perform to determine if wheel work is necessary for your dealer to do. First, check for any loose spokes. This can be checked by bracing the front end off the ground so that the front wheel can spin free. Slowly revolve the front wheel and at the same time let the metal shaft of a fairly heavy screwdriver bounce off each spoke. If all the spokes are tightened approximately the same, then the sound given off by the screwdriver hitting the spokes should sound the same. If one's spoke makes a dull flat sound, then check it for looseness. While you have the front end up in the air, you should check that the front wheel does not have too much run-out. "Run-out" is the amount the front wheel deviates from a straight line as it spins. Secure the front forks to keep them from turning, spin the front wheel, and solidly anchor some sort of a pointer about 1/8" away from the side of the rim.

Spoke torque: 9 in-lbs. (10 kg-cm) or more.

As the wheel spins, the distance between the pointer and the rim should not change more than 1/16" total. Any greater fluctuation means that you should have your dealer remove this rim warpage by properly adjusting the spokes.

**Note:**

The force-fitting method is employed for the TX650A driving chain. For this reason, the driving chain cannot be easily removed. It is requested that removal of the chain be done at the dealer's.

A new chain joint and chain joint plate must be used by the dealer in refitting of the chain.

**CAUTION:**

Rear wheel: Rear wheel dismounting and disassembly should be performed by your YAMAHA dealer as a considerable number of adjustments and safety related parts are involved.

## 8. Tire repair

First, remove the valve cap and valve stem lock nut. Empty all the air out of the tire. Use two tire removal irons (with rounded edges) and begin to work the tire bead over the edge of the rim, starting 180° opposite the tube stem. Take care to avoid pinching the tube as you do this. After you have worked one side of the tire completely off the rim, then you can slip the tube out. Be very careful not to damage the stem while pushing it back out to the rim hole. If you are changing the tire itself, then finish the removal by working the tire off the same rim edge just previously mentioned.

Reinstalling the tire assembly can be accomplished by reversing the disassembly procedure. The only difference in procedure would be right after the tube has been installed, but before the tire has been completely slipped onto the rim, inflate the tube. This removes any creases that might exist. Release the air and continue with reassembly. Also, right after the tire has been completely slipped onto the rim, check to make sure that the stem is squarely in the center of the hole in the rim.

Tire Pressure:

Front	23 lbs/in <sup>2</sup> (1.6 kg/cm <sup>2</sup> )	Normal riding
Rear	28 lbs/in <sup>2</sup> (2.0 kg/cm <sup>2</sup> )	

### Note:

When you run the machine at 100 mph (175 km/h) or more, the tire pressure should be 20 percent more than specified.

## 9. Drive chain

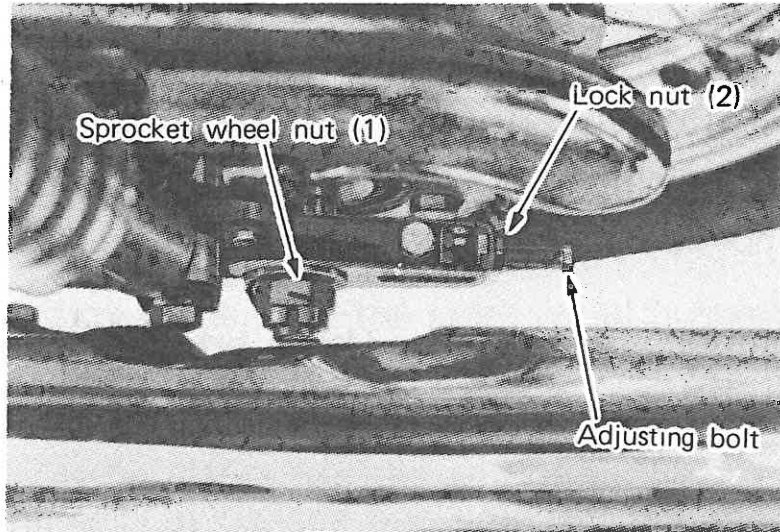
Because the chain consists of an extraordinary amount of parts that rub against one another, it is prone to wear if it is not maintained constantly and correctly. Without any lubrication, a chain can wear out within 100 miles. You should develop a habit of servicing the chain on a regular schedule. This habit is especially important if you spend the major portion of your time riding in the dirt where dust and dirt can readily work into the chain links.

- a Lubrication - - there are several excellent pressure can lubricants available. Use a brush and rag to wipe off any accumulation of dirt, then spray a liberal amount of lubricant on the chain at least every 200-250 miles.
- b Cleaning - - the chain has to be periodically removed from the machine and soaked in cleaning solvent. Completely saturate the chain with solvent to remove as much dirt as possible. Drain and dry the chain thoroughly. Immediately after the chain has dried completely, lubricate to prevent any rust from forming. (See also, P.37)
- c Adjustment - - proper drive chain up and down free play, with the rider in position, should equal  $\frac{3}{4}$  in. (20mm) when measured at the center of the lower section of chain.  
Follow these steps to obtain the correct free play:

### **CAUTION:**

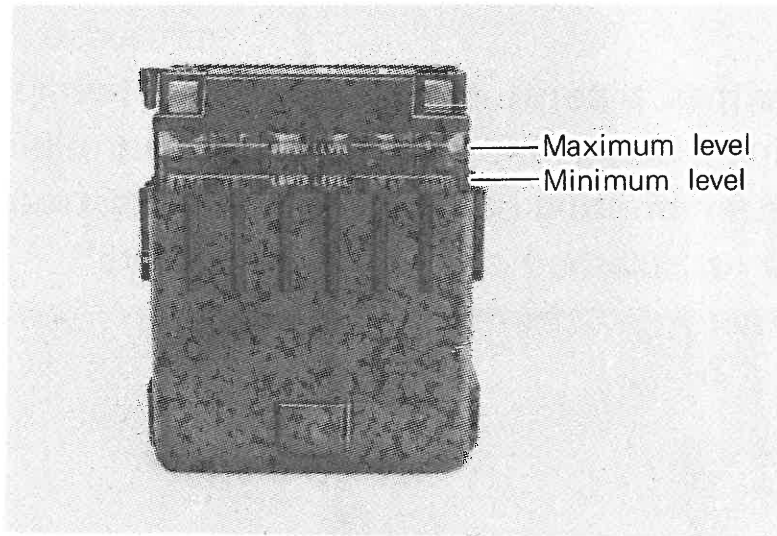
During machine cleaning, do not remove chain lubricant. See "Cleaning" section for additional details.





### Drive chain adjustment:

- a Remove the cotter pin and loosen the wheel nut (1).
- b Loosen the chain adjusting bolt lock nuts (2).
- c Rotate the adjusting bolts in or out, whichever is needed to obtain the correct free play, and at the same time make sure that both ends of the axle are positioned evenly. This can be checked by utilizing the marks on the very end of the swing arms, just above and to the rear of the rear wheel nuts.
- d After completing the adjustment, retighten all the lock nuts.
- e Finally, be sure to install a new cotterpin and check for correct brake pedal operation as it could have changed due to the chain adjustment.



## 10. Battery

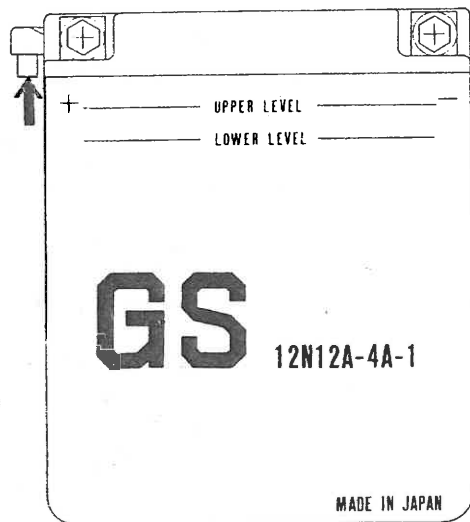
The life of your battery depends greatly on how well you keep it serviced. In order to service it completely and correctly, there are certain facts that you must know.

a Always keep the battery fluid level between the "Maximum" and the "Minimum" level. It should be checked at least once a month, and more often during hot weather. If the battery needs filling, use distilled water. Do not use tap water as it usually contains minerals that can be harmful to the life of the battery.

b If for any reason the battery has become discharged, and you are going to charge it yourself, use a "trickle charger" that has no more than a one amp maximum rating. Also, make sure that all the battery caps have been taken off and that the rubber battery breather tube is not clogged or pinched shut. A charging battery creates gas, and pressure could build up in the battery if all the outlets were plugged up. Charge battery in a well ventilated area away from open flame.

c If the motorcycle is to be stored for more than a month, then remove the battery, have it fully charged, and store it in a cool dry storage area. If storage time is going to be lengthy, it is best to leave the battery with your dealer with specific instructions to recharge the battery every month or so. This procedure is necessary to insure maximum battery life.

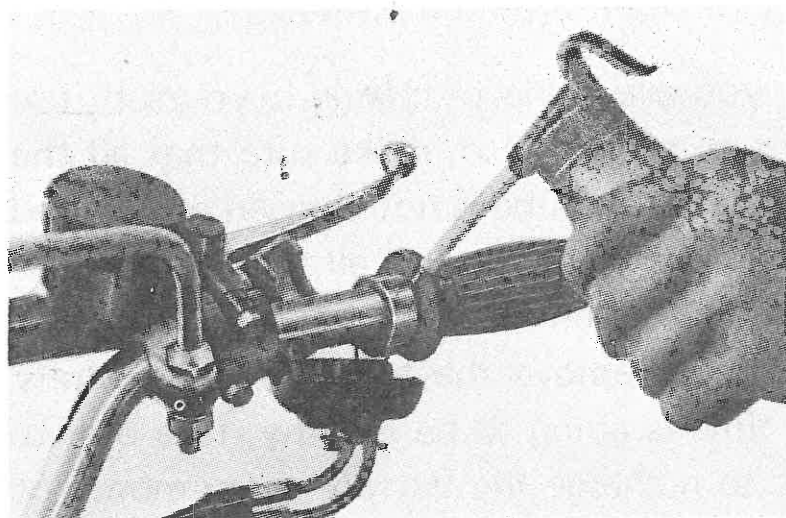
When reinstalling the battery, be sure to hook up the RED lead to the positive terminal and the BLACK lead to the negative terminal (the polarity of each is stamped just below each terminal).



**Note:**

Unfix breather pipe at arrowed position before dismounting battery. Also be sure to put pipe back after remounting battery. Make sure that no electrolyte is splashed on chain and others.

For breather pipe routing figure, refer to label back side of seat.

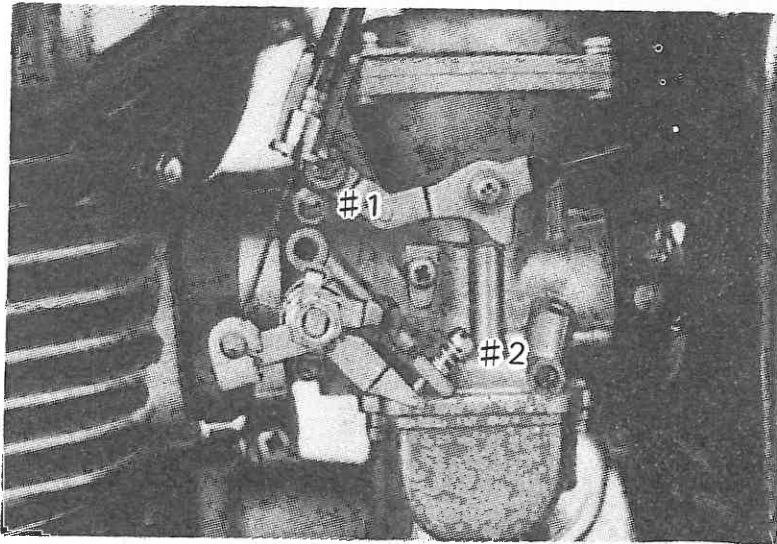


**11. Throttle cable and grip lubrication**

The throttle twist grip assembly should be greased at the time that the cable is lubricated, since the grip must be removed to get at the end of the throttle cable. Two screws clamp the throttle grip to the handlebar. Once these two are removed, the end of the cable can be held high to pour in several drops of lubricant. With the throttle grip disassembled, coat the metal surfaces of the grip assembly with a suitable all-purpose grease to cut down friction.

## 12. Carburetor

There are only three adjustments on the carburetor that do not require the services of a mechanic: the idle mixture, the engine idle speed, and throttle cable slack. Because the carburetor is such a critical part of the engine, any carburetor idassembly should be done by an experienced mechanic.



### a Idle mixture

To set the idle mixture you must turn the idle mixture screw (#1) in until it lightly seats, then back it out  $1\frac{3}{4}$  turns - - no more or no less. This is a factory setting that can be set with the engine stopped.

### b Idle speed

Start the engine and let it warm up. Next, screw the idle speed screw (#2) in or out, whichever direction is necessary for the engine to idle between 900 and 1,000 rpm (check tachometer).

#### **Note:**

Idle speed adjustment must be balanced between right and left cylinders.

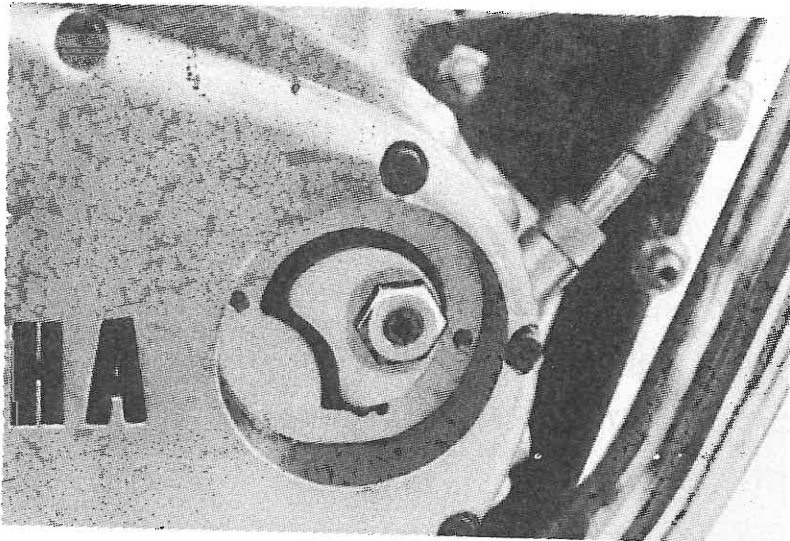
Consult your dealer for details of this adjustment.

### c Throttle cable slack

Fully close throttle grip. Adjust throttle cable adjusters so that each cable has 1mm free play before butterfly valve actuator mechanism starts to move when throttle grip is slowly rotated from the closed position.

## 13. Fuel petcock

The petcock serves another purpose other than acting as a fuel on and off valve. A wire mesh filter is incorporated into the assembly. This filter must be removed occasionally and cleaned. (See Maintenance chart.)



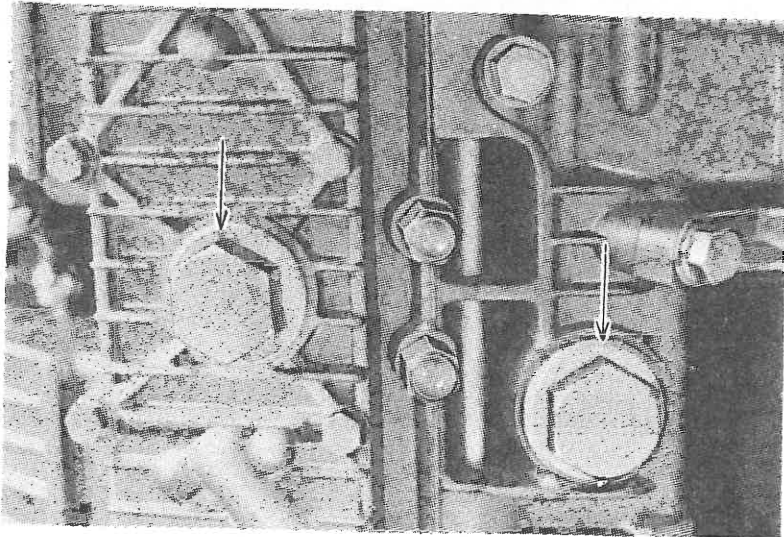
## 14. Oil Filter Element cleaning

The oil filter element must be cleaned periodically to insure a clean filtered oil supply for the engine. See Periodic Maintenance chart on Page 28 for required cleaning intervals.

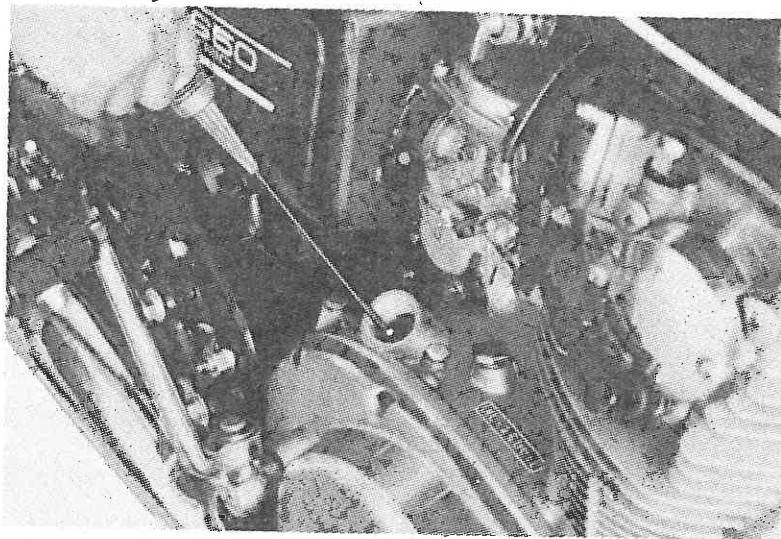
### To clean oil filter element

1. Remove the oil cleaner cover on the crankcase cover (R.).
2. Remove the oil filter element screw.
3. Remove the filter element and clean it.
4. Install the oil filter element.
5. Install the oil cleaner cover.
6. Run engine for 5 minutes, and check for oil leaks.

## 15. Engine oil replacement and level check



Oil type: SAE "SE"  
Viscosity: SAE 20W-40  
Amount: 2,500 cc (2.6 qts.)



First warm up the engine for a few minutes, then remove the crankcase drain bolts.

### Note:

To drain the oil, the motorcycle must be placed on a level ground, on the mainstand.

2. Fully tighten the drain bolts and pour 2.6 qts. (2,500 cc) of oil into crankcase.

3. Start the engine, run at idle speed 3-5 minutes, turn engine off.

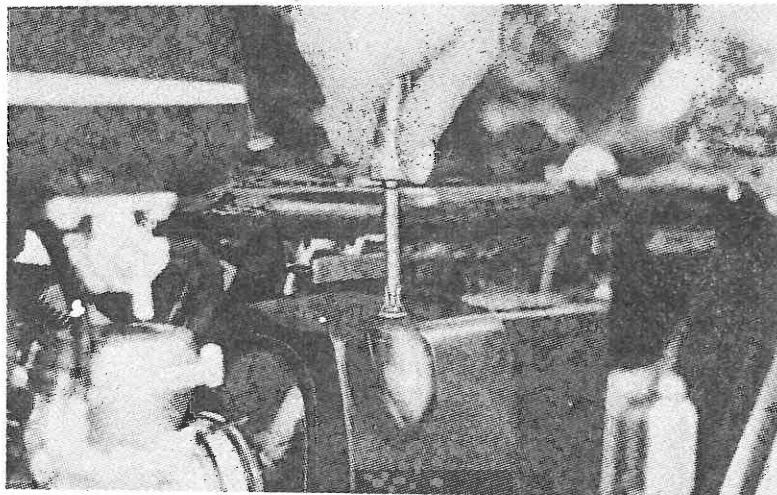
Check oil level with gauge. Add oil as necessary until level is correct.

## 16. Air filter

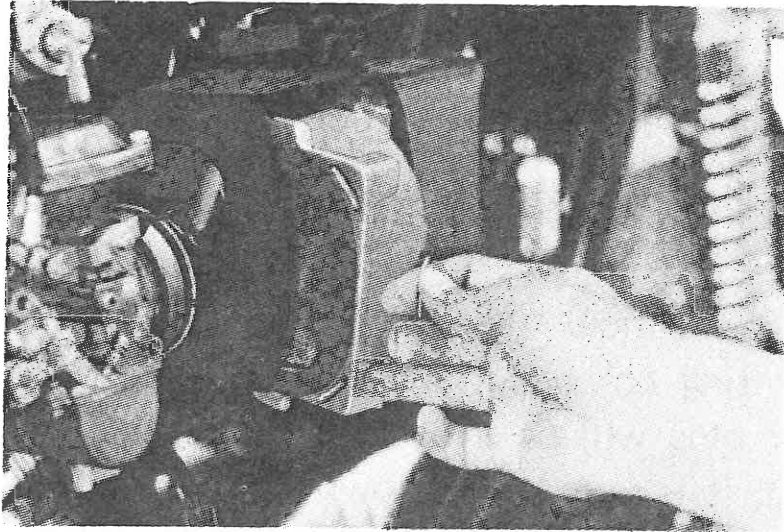
This model is equipped with a reuseable, oil impregnated, foam air filter. It must be removed and cleaned at least once a month, more often if the motorcycle is ridden mainly in the dirt (preferably each time after you spend an entire day in the dirt).



a Remove the sidecovers. (R.L.)



b Remove the cleaner case cover and take off the cleaner element.



- c Wash the foam filter thoroughly in solvent until all dirt has been removed. Squeeze all the solvent out. Pour oil onto the filter (away grade of 20 or 30wt), work it completely in, and then squeeze out the surplus oil. The filter should be completely impregnated with oil, but not "dripping" with it. Under no circumstances should you run the motorcycle without the air filter. First, dirt and dust will be able to pass through into the cylinder. Premature engine failure will be the result. Secondly, more air will flow to the engine and there will not be enough gasoline for all the air. The lean mixture will result in higher engine temperatures and possibly severe engine damage.

### 17. Ignition timing

Timing is of critical importance. If for any reason you wish to check the timing, have your dealer check it for you.

### 18. Breaker point

Unless you are sufficiently experienced, it would be advisable for a mechanic to replace the points, as ignition timing will change when the points are replaced. As it is, points and condenser normally last several thousand miles.



**Note:**

In addition to the above, changes in point gap through wear and/or filing for cleaning purposes will also change timing, have your Authorized Yamaha Dealer service the ignition for you.

**3. Spark plug**

The spark plug in your machine can tell you a great deal as to how the engine is operating when you know how to "read" the plug. If the engine is operating correctly, and if it is being ridden correctly, then the tip of the white insulator in the spark plug will be a light tan color (standard plug is NGK B-8ES). If, when you remove the spark plug, it is very dark brown or black, then a plug with a hotter heat range might be needed. This situation is quite common during the engine break-in period. If the insulator tip shows a very light tan color, or is actually white, or if the electrodes begin to melt, then a spark plug with a colder heat range is required. Again, if the spark plug insulator tip does not have a light tan color, have your dealer install a spark plug with a different heat range to correct the situation. Do not attempt to experiment with different heat range spark plugs yourself, as it takes an experienced eye to gauge which spark plug to use, and to gauge if the spark plug is actually at fault. It is all right though for you to replace the standard plug. Engine conditions can cause any spark plug to slowly break down. If deposits begin to build up, or if the electrodes finally become too worn, or if for any reason you believe the spark plug to not be functioning correctly, replace it. Be sure, when replacing the plug, that you always clean the gasket surface, that you use a new gasket, and that the spark plug is torqued to 230-250 in/lbs. Also wipe off any grime that might be present on the surface of the spark plug. The plug can be taken out to be cleaned and gapped. As long as deposit build-up on the insulator is not extreme, you can use a glass bead type spark plug cleaner to quickly remove the deposits.

Use a wire type feeler gauge to set the electrode gap at 0.020" - 0.024" (0.5 mm - 0.6 mm).

**Note:**

In addition to the above, changes in point gap through wear and/or filing for cleaning purposes will also change timing, have your Authorized Yamaha Dealer service the ignition for you.

**19. Spark plug**

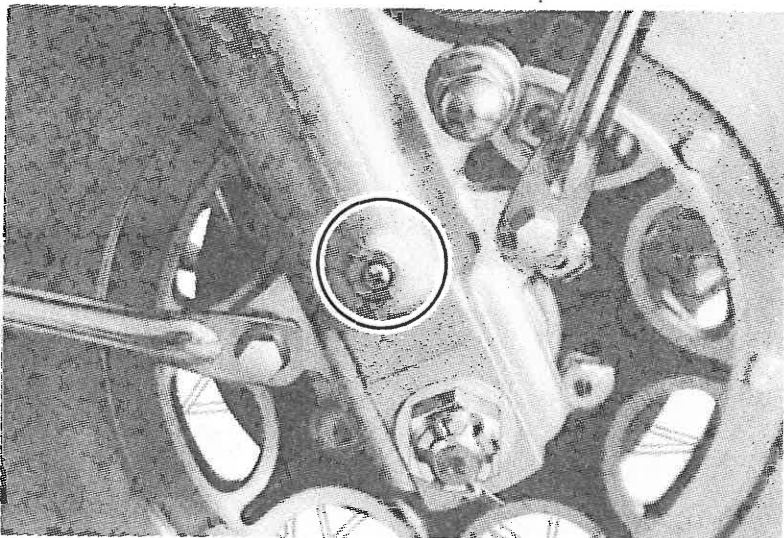
The spark plug in your machine can tell you a great deal as to how the engine is operating when you know how to "read" the plug. If the engine is operating correctly, and if it is being ridden correctly, then the tip of the white insulator in the spark plug will be a light tan color (standard plug is NGK B-8ES). If, when you remove the spark plug, it is very dark brown or black, then a plug with a hotter heat range might be needed. This situation is quite common during the engine break-in period. If the insulator tip shows a very light tan color, or is actually white, or if the electrodes begin to melt, then a spark plug with a colder heat range is required. Again, if the spark plug insulator tip does not have a light tan color, have your dealer install a spark plug with a different heat range to correct the situation. Do not attempt to experiment with different heat range spark plugs yourself, as it takes an experienced eye to gauge which spark plug to use, and to gauge if the spark plug is actually at fault. It is all right though for you to replace the standard plug. Engine conditions can cause any spark plug to slowly break down. If deposits begin to build up, or if the electrodes finally become too worn, or if for any reason you believe the spark plug to not be functioning correctly, replace it. Be sure, when replacing the plug, that you always clean the gasket surface, that you use a new gasket, and that the spark plug is torqued to 230-250 in/lbs. Also wipe off any grime that might be present on the surface of the spark plug. The plug can be taken out to be cleaned and gapped. As long as deposit build-up on the insulator is not extreme, you can use a glass bead type spark plug cleaner to quickly remove the deposits.

Use a wire type feeler gauge to set the electrode gap at 0.020" - 0.024" (0.5 mm - 0.6 mm),

## 20. Steering

Periodically you should check for any looseness in the steering assembly. Do this by blocking the front end off the ground, grasping the bottom of the forks, and gently rocking the fork assembly backward and forward. You will feel any looseness in the steering assembly bearings. If any exists, do not attempt to correct it yourself but let your dealer make the adjustment with the correct tools. Also, these same front fork bearings must also be lubricated every 4,000 miles. This the dealer should also do.

## 21. Front fork



At least every 4,000 miles the front fork oil should be completely drained and refilled. Remove the Phillips head screws in the very bottom of the forks. Next, remove the fork cap found on top of each fork tube. Most of the fork oil will drain out. Compress the forks several times to pump all the remaining oil out.

Reinsert the drain screw and make sure it is tight. Slowly pour in 4.5 oz. (136cc) oil in each fork leg. (see Lubrication Recommendations section for type oil).

At least every other time you should have your mechanic dismantle the fork assembly and thoroughly clean out each fork. Water and dirt eventually coat much of the inner fork surfaces and cannot be readily removed just by draining.

## 22. Cam Chain Tensioner

The overhead cam chain will require periodic adjustment of the cam chain tensioner to take up the slack due to normal chain wear. This is very important to maintain proper valve timing and reduce engine noise. This adjustment must be done by a competent mechanic at your Authorized Yamaha Dealer. See Periodic Maintenance Chart on page 28 for adjustment intervals.

## WARRANTY INFORMATION

Study your Owner's Warranty Guidebook thoroughly. It contains your Warranty Policy, an explanation of the policy, break-in procedures and the warranty-required service schedules. Becoming familiar with these items will be to your advantage in making the best use of Yamaha's warranty program.

The acceptance of any warranty claim that your dealer might submit in the future depends greatly on just what has been done to the motorcycle. **IF ANY PARTICULAR FAILURE CAN BE TRACED DIRECTLY TO A REPAIR OR MAINTENANCE PERFORMED INCORRECTLY, THE WARRANTY CLAIM MAY NOT BE ACCEPTED.** For this reason, we recommended that all services beyond those detailed in this manual be performed by a qualified mechanic at an authorized Yamaha dealer.

There are certain requirements that must be met to qualify for warranty coverage.

1. Your machine must be registered for warranty. This is accomplished when the Warranty Registration card is filled out by you and mailed by the dealer to Yamaha at the time of purchase.
2. Your Owner's Warranty Guidebook outlines the required service schedules and provides a maintenance record for your protection and convenience. Proper maintenance will insure a trouble free life for your new Yamaha.
3. If any problems occur which you feel should be covered under warranty, **NOTIFY YOUR DEALER IMMEDIATELY.** Do not delay, as little problems left unrepaired can become large problems which may not be covered under warranty.

## Troubleshooting

### 1. Factory Authorized Service

Your Yamaha dealer is a factory trained mechanic who guarantees thorough and correct maintenance for your motorcycle. We recommend that you let your dealer make all repairs and adjustments on your motorcycle. You will be assured prompt and good service.

### 2. Genuine Yamaha Parts

Always use genuine Yamaha parts and not "substitute" brands. Yamaha parts are manufactured to meet the factory's exacting standards of precision and quality.

### 3. If Something Should Go Wrong . . . . .

The TX650A undergoes rigid factory tests to assure you long and satisfactory performance. However, if something should go wrong with your machine, immediately ask your Yamaha dealer for advice. He is always glad to answer your questions.

**IMPORTANT:** Some components are sealed or cannot be disassembled. If repairs to such components are necessary go to your Yamaha dealer. Yamaha cannot be responsible for repairs and adjustments to such components performed by unauthorized personnel.

## REQUIREMENTS FOR A GOOD MOTORCYCLIST

1. Safety is more important than speed. Always observe traffic regulations & signs.
2. Always use quality gasoline and oil, and avoid the inconvenience of running out of gas or oil.
3. Check tire pressures before every ride.
4. Warm up the engine for about one minute before riding.
5. Shift gears gently, while momentarily closing the throttle, avoid power shifting.
6. During the break-in period, ride at the suggested speed in each gear.
7. Apply the front and the rear brake at the same time.
8. Down a long hill, use engine compression as a brake.
9. When parking, be sure to turn off and remove the ignition key, turn off the fuel petcock, and lock the steering.
10. Check parts at regular intervals as described in this manual.

## Consumer Information

### Stopping Distance

This figure indicates braking performance that can be met or exceeded by the vehicles to which it applies, without locking the wheels, under different conditions of loading and with partial failures of the braking system. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions and the information may not be correct under other conditions.

Description of vehicles to which this table applies: Yamaha motorcycle TX650A

#### A. Fully Operational Service Brake

Load

Light

Maximum

170

180

0

100

200

300

Stopping Distance in Feet from 60 mph.



## Acceleration and passing ability

This figure indicates passing times and distances that can be met or exceeded the vehicles to which it applies, in the situations diagrammed below.

The low-speed pass assumes an initial speed of 20 mph and a limiting speed of 35 mph. The high-speed pass assumes an initial speed of 50 mph and a limiting speed of 80 mph.

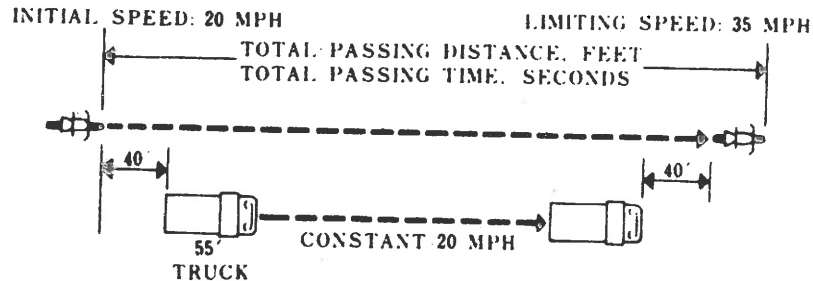
NOTICE: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies: Yamaha motorcycle TX650A

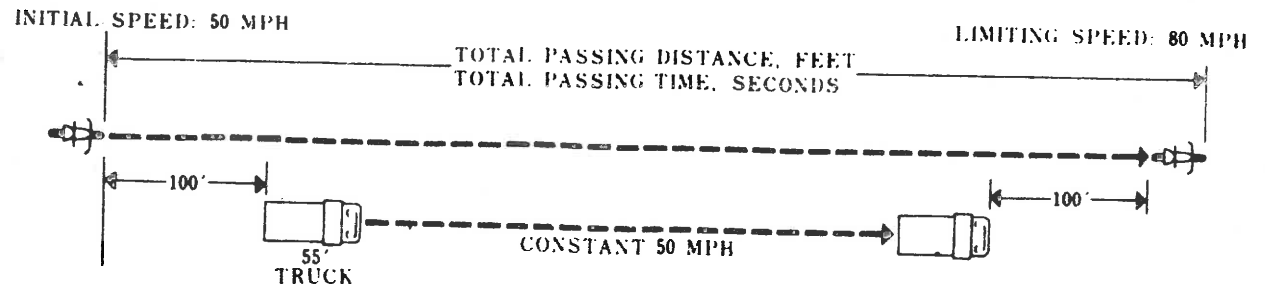
Summary table:

Low-speed pass	..... 354 feet; 7.2 seconds
High-speed pass	..... 947 feet; 9.3 seconds

### LOW-SPEED



### HIGH-SPEED



# CLEANING AND STORAGE

## A. 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:

- a. Block off end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.
- b. Remove air cleaner or protect it from water with plastic covering.
- c. Make sure spark plug(s), gas cap, oil filler cap, engine oil level gauge cap and battery caps are properly installed.

### 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 have resulted 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 tooth brush 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. Chrome-plated parts such as handlebars, rims, spokes, forks, etc., may be further cleaned with automotive chrome polish.
8. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
9. 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 on fuel and side curves.
10. After finishing, start the engine immediately and allow to idle for several minutes.

## B. 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 a storage as follows:

1. Drain fuel tank, fuel lines, and carburetor float bowl(s);
2. Remove empty fuel tank, pour a cup of 10W to 30W oil in tank, shake tank to coat inner surfaces thoroughly and drain off excess oil. Reinstall tank.
3. Remove spark plug(s), pour about one tablespoon of 10W to 30W oil in spark plug hole(s) and reinstall spark plugs. Kick engine over several times (with ignition off) to coat cylinder walls with oil.
4. Remove drive chain. Clean thoroughly with solvent and lubricate with chain lubricant. Reinstall chain or store in a plastic bag (tie to frame for safe-keeping).
5. Lubricate all control cables.
6. Remove battery and charge. Store in a dry-cool place and re-charge once a month. Do not store battery in an excessively warm or cold place (less than 32°F or more than 90°F).
7. Block up frame to raise both wheels off ground. (Main stands can be used on machine so equipped.)
8. Deflate tires to 15psi.
9. Tie a plastic bag over exhaust pipe outlet(s) to prevent moisture entering.
10. 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.



SINCE 1887

**YAMAHA MOTOR CO., LTD.**

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