FOREWORD

Dear Friend,

Thank you for choosing the TVS StaR HLX 150, strongest and most reliable motorcycle.

As a proud owner of TVS StaR HLX 150, you are now part of a family of millions of satisfied TVS customers.

TVS StaR HLX 150 is designed to deliver superior durability, best in class power and host of other features. It also comes with refreshing looks.

This manual explains the features and operations of your TVS StaR HLX 150. Please read it carefully and follow the instructions to enjoy years of safe riding.

To ensure reliable performance, we urge you to get your TVS StaR HLX 150 serviced only at TVS Motor Company Authorised Dealers / Authorised Service Centers at specified regular intervals.

Happy Riding!

TVS MOTOR COMPANY LIMITED

NOTICE

All information, illustrations, photographs and specifications contained in this owner's manual are based on the latest product information available at the time of this publication. TVS Motor Company Limited may, however incorporate modifications or improvements on its vehicles at any time without notice and therefore, in such events it is possible that the relevant part of the owner's manual does not apply to your vehicle.

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NOTE

Accessories shown in the picture may not be part of the standard equipment.

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SAFETY INFORMATION

Operating this vehicle safely is an important responsibility of the rider. To help you make decisions about safety, we have provided operating procedure and other information in this manual. This information alerts you on potential hazards that could hurt you or others. Since it is not possible to warn you about all hazards associated with operating or maintaining the vehicle, you must use your own judgement.

You will find important safety information in following form with corresponding connotations in this manual:

⚠ WARNING

Disregarding this message might result in injury to the rider.

☛ CAUTION

This message indicates special procedures or precautions to be followed to avoid damage to the vehicle.

NOTE

This message provides further clarification for clearer understanding of any particular information.

RUNNING-IN INFORMATION

The first 1000 km is a crucial part for the life of your TVS StaR HLX 150. Proper running-in operation during this period helps in ensuring a maximum life and smooth performance of your motorcycle.

The reliability and performance of your TVS StaR HLX 150 depends on the special care and restraint exercised during the running-in period. It is especially important that you avoid operating the engine in a manner, which could expose the engine parts to excessive stress. Maximum recommended speed during the running-In is:

Maximum 50 kmph speed upto 1000 km (vary the engine speed for better mating of parts).

The first free service at 500 ~ 750 km is most important. During running-in period all the engine components and other parts will have set in. All adjustments to be restored, all fasteners to be tightened. Engine cum transmission oil to be replaced. Timely performance of the first free service will ensure optimum service life and performance from the engine.

SAFE RIDING RECOMMENDATIONS

Any two wheeler riding requires some precautions to be taken to ensure the safety of the rider, pillion rider and other road users. These precautions are:

Riding apparel

Loose, fancy clothing can be uncomfortable and unsafe when riding a two-wheeler. Choose good quality two wheeler riding apparel.

Familiarise yourself with new TVS StaR HLX 150

Riding skill and your mechanical knowledge form the foundation of safe riding practices. We suggest you to practice riding in a low-traffic condition until you are thoroughly familiar with your vehicle and its controls. Remember perfect practice makes you perfect.

⚠ WARNING

Two wheeler safety equipment starts with a safety helmet of good quality. One of the most serious injuries that can happen is a head injury. Always wear good quality helmet. You should also have good suitable eye protection.

Know your limits

Ride within the boundaries of your own skill at all times. Knowing these limits and staying within them will help you to avoid accidents.

Posture

Proper vehicle riding starts with proper posture.

1. Keep your elbows inside close to the body and kept flexible.
2. Hold your arms at an angle of about 120°.
3. Hips should be in a position so that arms and shoulders are relaxed.
4. Look widely instead of gazing at one point.
5. Relax to guard against a sudden impact.
6. Hold the tank tightly with knees.
7. Point the toes straight ahead.

Cornering

When cornering, centrifugal force works in a direction perpendicular to the direction in which the vehicle is moving.

Centrifugal force increases in proportion with speed and shorter the radius of the corner, the greater it becomes. During cornering, reduce speeds so as to lessen the effects

of centrifugal force. By all means, avoid abrupt application of brakes or sudden steering.

⚠ WARNING

One-hand riding is dangerous. Keep both hands firmly on the handle bar and both feet securely on the foot rest. Under no circumstances should both the hands be removed from the handle bar, as it is very dangerous.

Avoid use of mobile phones while riding as it could lead to fatal accident.

Do not downshift the gears in the midst of cornering. Slow down to a safe speed before negotiating a corner. If this is the first time that you are riding a vehicle of this type, we suggest that you practice on a safe, open area to become thoroughly familiar with the operation of the vehicle.

Braking

For safe riding, it is very important to master the braking techniques.

1. Close / release the throttle.
2. Hold the vehicle upright as you apply the brake.
3. Progressive application of brakes is safer.
4. Never depress the clutch lever while braking at higher speeds.
5. Apply both the brakes.
6. Riding down hills and while cornering, close throttle and down shift the gear to take advantage of gearbox and engine which acts as an additional brake. This will avoid the loss of control over the vehicle due to over speed.

Causes for poor braking

1. If the brake shoes or drum are worn out or if there is water or oil on them, sufficient friction does not develop and brakes do not work well.
2. Even when the brake works normally, if the road surface is wet or the tyre surface is worn-out, tyres do not take a firm hold on the surface, prolonging the stopping distance.
3. Approximately 60% braking effect is from front brake.Non-usage of front brake causes poor braking.

⚠ WARNING

As the vehicle speed increases, the stopping distance also increases progressively. Be sure that, you have sufficient distance between you and the vehicle or obstruction ahead of you.

Using only the front or rear brake is dangerous and can cause skidding and loss of control. Apply both the brakes together and with great care on a wet road or other slippery surfaces. Any abrupt braking on slippery or irregular roads can cause loss of rider control.

ACCESSORY INSTALLATION AND SAFETY TIPS

Use extreme caution while selecting and installing the accessories for your TVS StaR HLX 150.

The addition of unsuitable accessories can lead to unsafe operating conditions. Your friendly dealer will assist you in selecting quality accessories and installing them correctly.

While selecting the accessories, make sure the accessories should not obstruct lighting, steerability and suspension level.

Additional electrical equipments and controls should not exceed the specified electrical system load of the vehicle.

EMISSION CONTROL

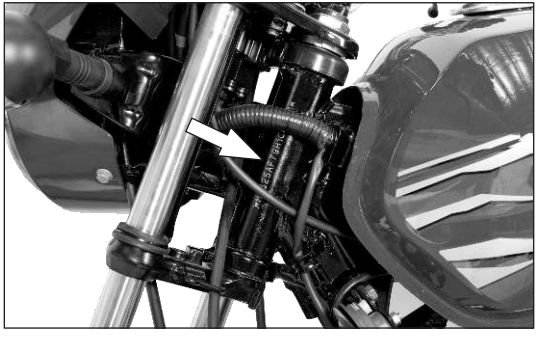
All the TVS motorcycles are tested in the factory for optimum fuel efficiency and lowest possible CO levels. **Kindly do not disturb the Carburettor settings as this may lead to higher fuel consumption and also higher CO levels.**

If the vehicle needs any adjustments, please consult nearest TVS Motor Company Authorised Dealer or Authorised Service Centre.

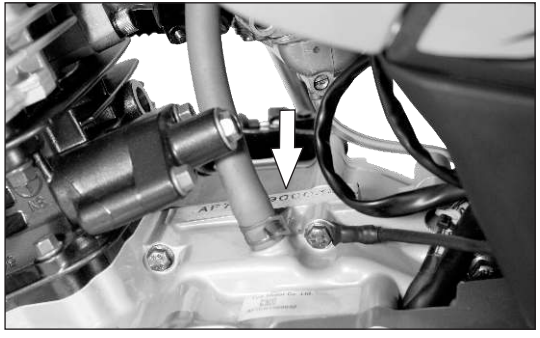
While adequate care is exercised at the factory to ensure that the emissions are within the limits, it is essential for the owner to always maintain TVS StaR HLX 150 motorcycle in good condition by getting it periodically serviced and checked by TVS Motor Company Authorised Dealer or Authorised Service Centre so that the emission and fuel consumption levels are maintained as per norms.

VEHICLE IDENTIFICATION NUMBER

Serial numbers of both frame and engine are required for vehicle identification. They are also required to assist your dealer for operating parts or referring to special information.



The frame serial number is stamped on the left side of the steering head tube.



The engine serial number is stamped on the top surface of left hand side crank case near the cylinder block mounting.

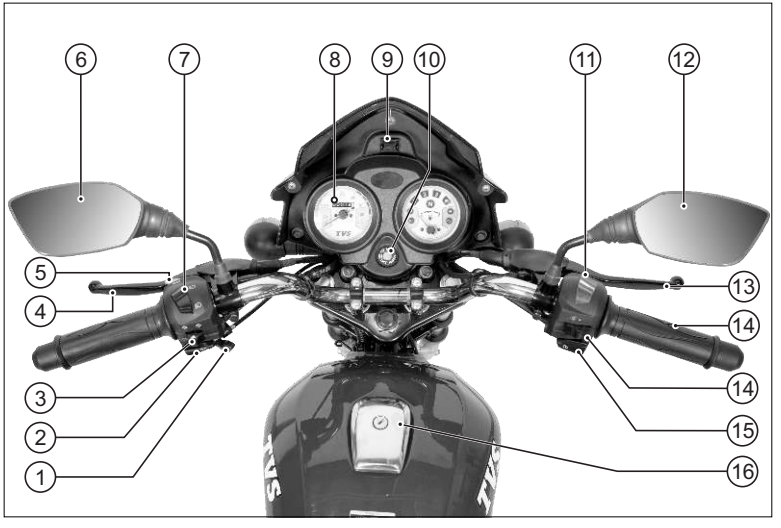
Frame number

Engine number

Control key number

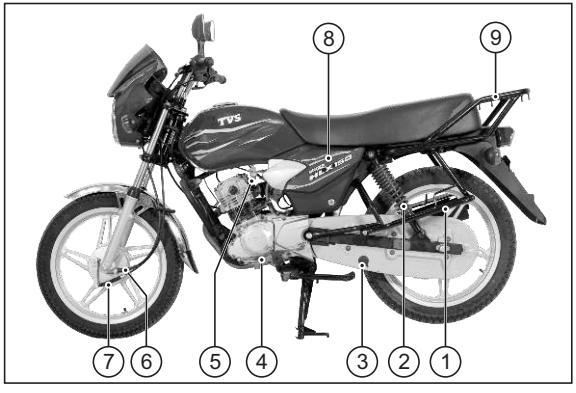
Please fill the above box now for future reference

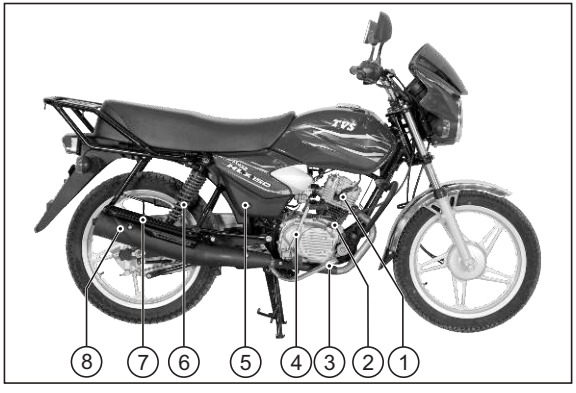
LOCATION OF PARTS - HANDLE BAR



1. Choke lever
2. Horn switch
3. Turn signal lamp switch
4. Clutch lever
5. Pass by switch
6. Rear view mirror L
7. High / low beam switch
8. Speedometer assembly
9. USB Charger
10. Ignition switch cum steering lock
11. Hazard switch
12. Rear view mirror R
13. Front brake lever
14. Throttle grip
15. Headlamp switch
16. Electric starter switch
17. Fuel tank cap

LOCATION OF PARTS





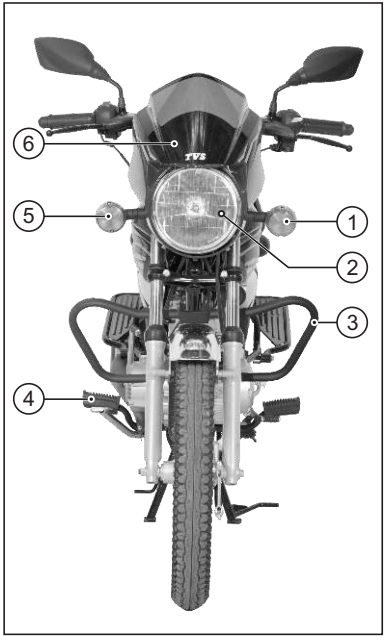
VEHICLE LEFT SIDE

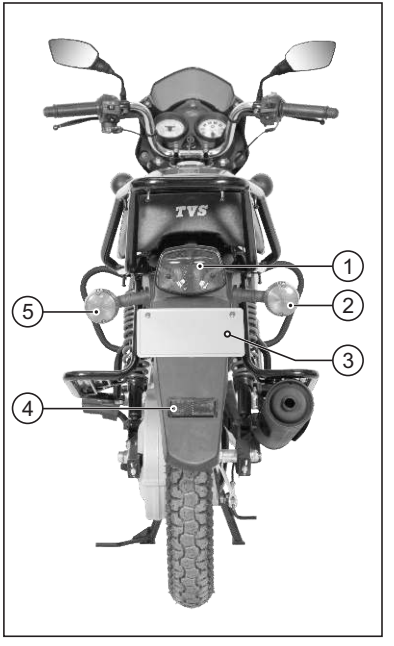
1. Pillion foot rest L
2. Rear shock absorber L
3. Chain inspection window
4. Gear shift lever
5. Fuel cock
6. Speedometer cable
7. Front brake cable
8. Lock cover frame L
9. Handle pillion

VEHICLE RIGHT SIDE

1. Spark plug
2. Gauge oil level
3. Rear brake pedal
4. Kick starter lever
5. Cover frame R screw
6. Rear shock absorber R
7. Pillion foot rest R
8. Muffler assembly

LOCATION OF PARTS





VEHICLE FRONT SIDE

1. Front turn signal lamp L
2. Head lamp assembly
3. Crash guard
4. Rider foot rest
5. Front turn signal lamp R
6. Housing head lamp front visor

VEHICLE REAR SIDE

1. Tail / brake lamp assembly
2. Rear turn signal lamp R
3. Rear number plate
4. Reflex reflector
5. Rear turn signal lamp L

CONTROL KEY

TVS StaR HLX 150 comes with a pair of identical control keys. These keys are to operate ignition switch cum steering lock, fuel tank cap and cover frame L.

IGNITION SWITCH CUM STEERING LOCK

The ignition switch cum steering lock has three positions:

1. 'OFF' position

All the electrical circuits are turned 'OFF' in this position. Key can be taken out.

2. 'ON' position

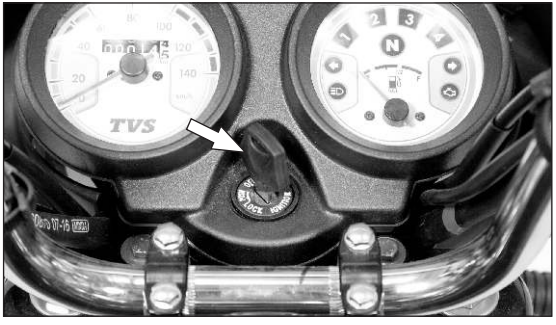
In this position you can start the engine and operate turn signal lamp, gear position indicators and horn. Key cannot be removed in this position.

3. 'LOCK' position

TVS StaR steering can be locked in both left and right directions.

To lock the steering, turn the handle bar all the way to the left or right. Insert the key into the lock, push in, hold and turn it to 'LOCK' position. Take out the key once the steering is locked.

Turning the key to 'OFF' or 'ON' position unlocks the steering.



CAUTION

Leaving the key in 'ON' position will drain the battery when vehicle is not in use . So "Switch off" and take the key out when the vehicle is not in use.

WARNING

Never attempt to move the vehicle when the steering is locked, you may lose the balance.

SPEEDOMETER ASSEMBLY

1. Speedometer

Indicates the road speed in kilometers per hour.

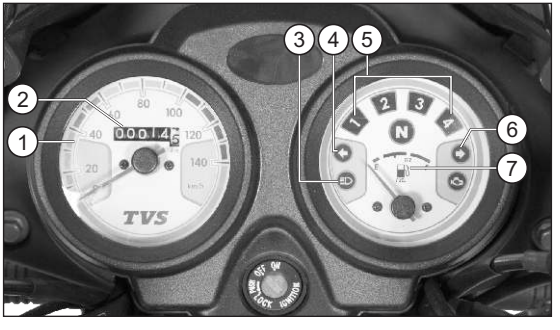
2. Odometer

Registers the total distance covered by the vehicle in kilometers.

Last digit of the odometer denotes one tenth of a kilometer.

3. High beam indicator

When the head lamp high beam is 'ON', a blue indicator ( ) glows.



4. Turn signal indicator left

When the turn signal lamp switch knob is operated to the left side ( ), the left side turn signal indicator lamp flashes.

5. Gear position indicators

Indicates the gear position. When the gear position becomes neutral, a green colour neutral indicator (**N**) glows. All other gear positions (ie. **1**st, **2**nd, **3**rd and **4**th) are indicated with the number and glows in amber colour.

6. Turn signal indicator right

When the turn signal lamp switch knob is operated to the right side ( ), the right side turn signal indicator lamp flashes.

7. Fuel gauge

Fuel gauge indicates the approximate quantity of fuel available in the fuel tank.

HANDLE BAR LEFT SIDE

1. Choke lever

Choke is required for starting a cold engine.

Choke lever is provided on the left side of handle bar. Pull the lever to switch 'ON' the choke. Once the vehicle is started and engine is running at stable speed, release the lever to its original position.

2. Horn button

Press the knob ' ' to operate the horn.

3. Turn signal lamp switch

When the turn signal lamp switch knob is pushed to the left side ( ) or right side ( ), the turn signal lamps flashes along with the indicator.

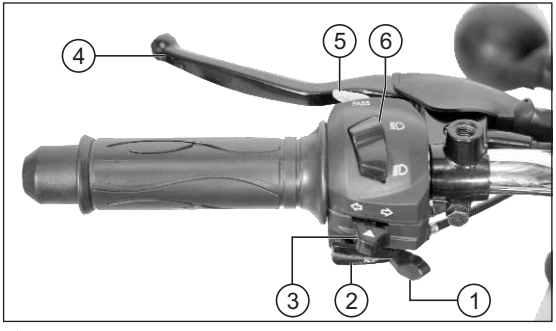
4. Clutch lever

Use clutch lever to disengage the drive to the rear wheel while shifting the gears. Pressing the lever disengages the drive.

CAUTION

Always use choke for cold starting.

Never open the throttle when the choke is applied, it may lead to flooding of engine and difficulty in starting.



WARNING

Always use the appropriate turn signal lamps when you intend to change lanes or take turns. Be sure to switch 'OFF' the lamps after negotiating the lanes or turns.

5. Pass by switch

The head lamp high beam glows when the pass by switch knob (*PASS*) is pressed.

Press the knob intermittently while overtaking another vehicle during day time to give signal to the opposite vehicles.

6. Head lamp high/low beam switch

Press the knob towards ' ' to operate the head lamp high beam.

Press the knob towards ' ' to operate the head lamp low beam.

WARNING

Use appropriate head lamp high/low beam as per the traffic and road conditions for your safety and to avoid inconvenience to the riders.

HANDLE BAR RIGHT SIDE

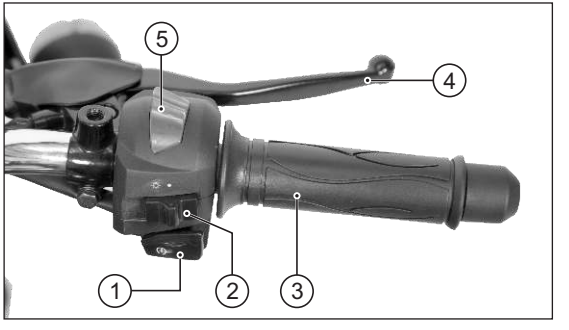
1.Electric Starter Switch

Press the switch ' ' to start the engine electrically even when the vehicle is in any gear.

2. Head lamp switch

Head lamp switch has two positions ' ● 'and ' ' to control head lamp.

Off :	Head lamp, speedometer lamps and tail lamp are 'OFF' when the knob is positioned at ' ● '.
On:	Head lamp, speedometer lamps and tail lamp glows when the knob is positioned at ' ' and engine is running.



3. Throttle grip

Engine speed is controlled by the rotation of the throttle grip. Twist it towards you to increase the engine speed. Twist it away from you or release it to decrease the engine speed.

4. Front brake lever

The front brake is applied by pressing the front brake lever gently towards the throttle grip. Brake lamp also glows on application of brake.

5.Hazard switch

Hazard switch is provided to use whenever you find it necessary to park the motorcycle in a hazardous location due to emergency situation. Pressing this switch away from you with the ignition 'ON' condition makes all the turn signal lamps to flash simultaneously to make other road users aware of the presence of the vehicle.

FUEL TANK CAP

To open the fuel tank cap, move away the lid from its position, insert the control key into the key hole, turn it clockwise and lift the cap. Press the cap back to its original position for closing. Take out the and move the lid back to its original position.

⚠ WARNING

Avoid spilling of fuel on the hot engine. Never refill fuel near open flame. Do not smoke while refueling. Do not use cell phones while refueling.

CAUTION

Whenever refueling the bike, fill upto the bottom of neck portion of the fuel tank. Filling above the neck may result in improper breathing of fuel tank.



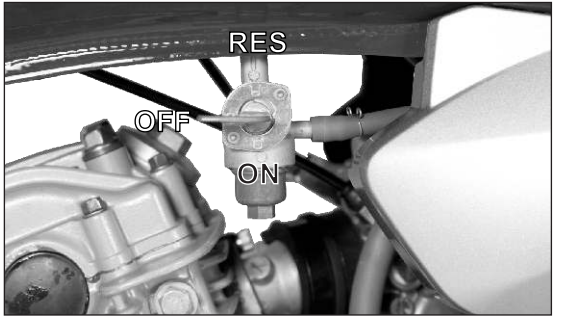
FUEL COCK

Fuel cock has the following three positions:

ON: Fuel flows in this position when the fuel is above the reserve level in the tank.

RES: Switch over the fuel cock lever to this position when the fuel stops flowing in 'ON' position.

OFF: Fuel flow cuts off from the tank to carburettor.



While riding with fuel cock lever in 'ON' position and if the fuel in the tank reaches reserve level, you may experience engine sluggishness and jerky feeling. Take the vehicle to the left side of the road while taking care of traffic and change the fuel cock lever position to 'RES'.

CAUTION

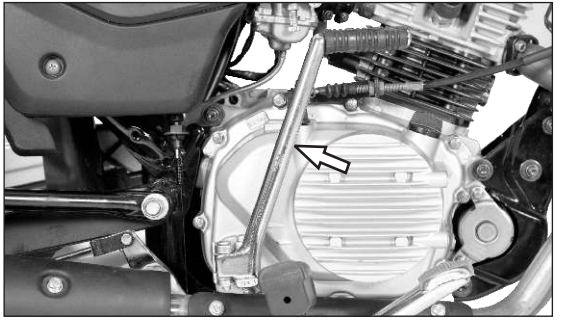
Do not position the fuel cock lever between 'ON' and 'OFF' position as this may drain off entire fuel while riding the vehicle.

NOTE

It is good practice to turn the fuel cock lever "OFF" position, when the engine is not running.

KICKSTARTER LEVER

The kickstarter lever is located on the right side of the engine. The engine can be started by kicking the lever while the ignition key in 'ON' position and keeping the transmission in neutral.



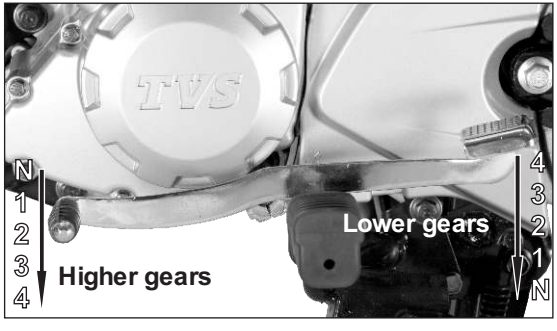
WARNING

It is recommended always to start the vehicle keeping the gear in neutral position.

GEAR SHIFT LEVER

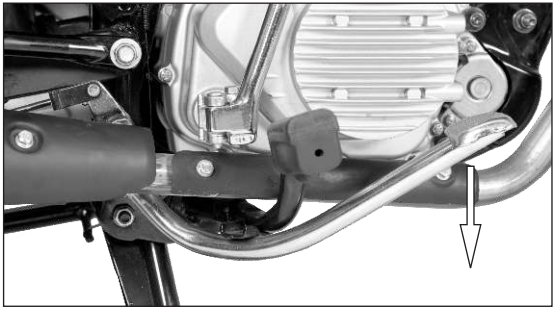
Gear shift lever is located on the left side of the vehicle.

Shifting into the higher gears from neutral position is accomplished by depressing the clutch lever and pressing the front end of shifting lever by toe and down shifting to lower gears by pressing the rear end of the lever by heel once for each gear.



REAR BRAKE PEDAL

Rear brake pedal is located on the right side of the vehicle. Press the rear brake pedal with your right foot to apply the rear brake. The brake lamp glows on application of brake.



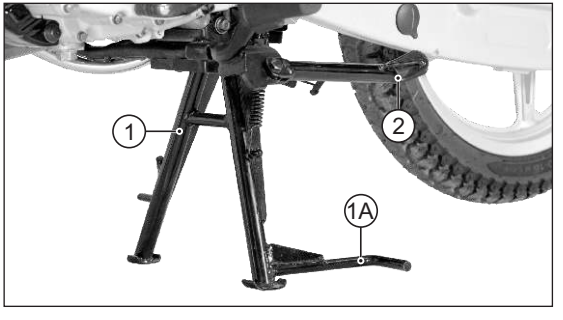
⚠ WARNING

Brakes are items of personal safety and should always be maintained in proper condition.

CENTRE STAND AND SIDE STAND

TVS StaR HLX 150 is equipped with centre and side stand. To place the vehicle on the centre stand (1), hold the handle bar left grip with left hand and pillion handle with right hand. Place your foot firmly on the centre stand extension (1a) and press down with adequate effort. Ensure both the legs of centre stand are touching ground before placing the vehicle on the stand.

Side stand (2) can be operated with your foot by pushing it away from the vehicle till it stops.



⚠ WARNING

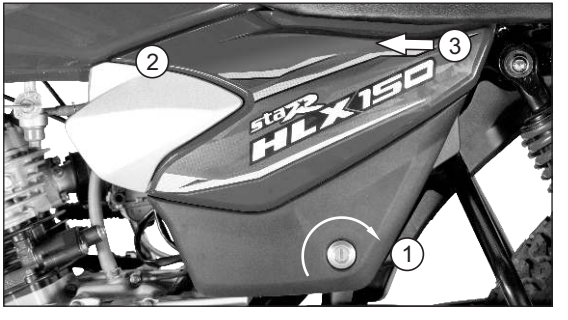
Always release side stand to its full up position before putting the vehicle in motion.

CAUTION

Never sit on the vehicle when it is supported by side stand. Always park the vehicle on a flat, firm surface.

COVER FRAME L

TVS StaR HLX 150 is provided with lockable cover frame on the left side. Open the cover frame to access tool kit and battery assembly.



1. Insert the key in the cover frame at lock (1) and rotate it in clockwise direction.
2. Pull out the cover frame gently at (2), slide it forward at (3) and take out.

Reassembly

1. Assemble the cover frame by carefully sliding the rear portion (3) on to the hook on the frame while ensuring the availability of rubber cushion on the hook.
2. Locate its lug (2) on the hole provided in the fuel tank while ensuring the availability of rubber cushion on the hole, gently press and lock with the key by rotating in anti-clockwise direction.

COVER FRAME R

Cover frame R can be removed by removing the mounting screw (A). Follow the procedure of cover frame L removal and reassembly.

CAUTION

While reassembling the cover frames, see that the rubber cushions provided for the cover lugs are in place.



TOOL KIT

To assist you in performing certain aspects of maintenance and emergency repairs, a tool kit is supplied along with the vehicle and is located below the cover frame L.

Remove the cover frame as explained earlier.

The tool kit consists one number each of the following:

1. 16 mm box spanner
2. 14x17 mm open end spanner
3. 10x12 mm open end spanner
4. Combination screw driver bit
5. Screw driver handle
6. Tool bag

CAUTION

It is recommended to use the tool kit in case of any emergency only. It is always advisable to take your vehicle to TVS Motor Company Authorised Dealer/Authorised Service Centre.

SMART PHONE CHARGERS

An all new smart phone charging port has been provided above the speedometer assembly of your vehicle.

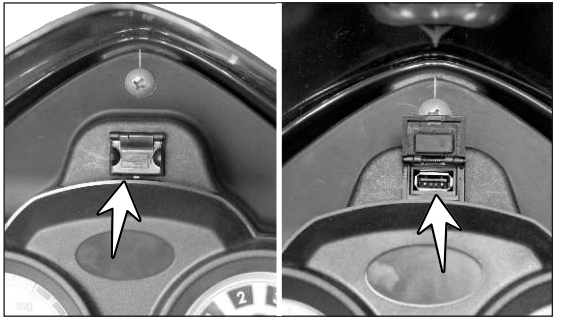
Please follow the guidelines provided for using it properly:

DO'S

1. Ensure that no water enters into the unit, by closing the USB flap properly.
2. Use only mobile phone company's authorized USB cable for mobile charging.
3. Ensure the flap is not damaged while opening/ inserting the USB cable.

DON'T'S

1. Do not leave the USB charging flap open/partially closed when not in use.
2. Do not attempt to use/charge any other device, other than one mobile phone at a given time.
3. Do not try to force the USB connector in, check if it is inserted in the appropriate direction, to prevent damage.



4. Do not charge your mobile when engine is off.
5. Do not use other device, this port is for charging mobile phones only.

The charging time of the mobile may vary, depending on the mobile battery's state of charge.

The flap in the unit has been designed to prevent water entry and is not replaceable.

CAUTION

TVS is not responsible for any damage to mobile phones in the event of fall while charging during vehicle moving.

Inspection before riding

Check the following items before riding.

ITEM	WHAT TO CHECK FOR
Engine cum Transmission oil	Availability of oil upto the level. (page no. 33)
Fuel	Enough fuel for the planned distance of running.
Tyres	Correct pressure. (Page no. 37) Adequate tread depth / no cracks or cuts.
Battery	Proper working of horn, brake lamp, turn signal lamps and neutral lamp. Electrolyte level. (page no. 32)
Lighting	Head lamp high/low beam, high beam indicator, speedo lamps and tail lamp.
Steering	Smooth movement / no play or looseness
Throttle	Correct free play of cable / smooth operation
Clutch	Correct free play of cable. (page no. 34) Smooth and progressive action.
Brakes	Correct lever and pedal play. (page no. 35)
Wheels	Free rotation.

Starting the engine

Turn the fuel cock lever to the 'ON' or 'RESERVE' position based on availability of fuel in fuel tank. Insert control key into the ignition switch cum steering lock and turn it to 'ON' position. Make sure that the transmission is in neutral position press the electric starter switch to start the engine electrically and kick start the engine.

When the engine is cold

- ❑ Pull the choke lever towards left and start the engine. Let the engine to idle in choke applied condition.
- ❑ Once the engine is warm, release the choke lever to its original position.

⚠ WARNING

Do not run the engine indoors where little or no ventilation available. Exhaust gas is extremely poisonous.

☛ CAUTION

Do not keep the engine in idling rpm for long and do not open excessive throttle when engine is idling, it leads to overheating of the engine and damage to internal components.

Setting the vehicle in motion

Depress the clutch lever and engage first gear by pressing the front end of the gearshift lever downward by toe. Twist the throttle grip towards you and simultaneously release the clutch lever gently and gradually.

The vehicle will start moving forward. As the vehicle picks up speed, shift to the next higher gear by closing the throttle, pulling the clutch lever in and pressing the front end of the gear shift lever downwards once again. Release the clutch lever and open the throttle again. Select the required gears in similar manner.

Using the transmission

The transmission is provided to keep the engine run smoothly in its normal operating speed range. The gear ratios have been carefully chosen to meet the characteristics of the engine. The rider should always select the most suitable gear to achieve the necessary speed and pulling power smoothly.

Riding on hills / gradients

When climbing steep hills, the motorcycle may begin to slow down and show lack of power. At this point you should shift to a lower gear so that the engine will again be operating in its normal power range. Shift gears rapidly to prevent the motorcycle from losing momentum.

When riding down a hill, the engine may be used as braking by shifting to a lower gear.

Stopping and parking

1. Close the throttle completely and apply both brakes simultaneously.
2. Down shift the gears as road speed decreases. Bring the engine to neutral position just before the vehicle stops.
3. Turn the ignition 'OFF'.
4. Park the vehicle on a firm, flat surface.
5. Lock the steering and turn fuel cock to 'OFF' position.

⚠ WARNING

Reduce speed to a safe limit before turning / cornering. It is not advisable to apply brakes while turning / cornering. Do not disengage the clutch while braking.

FUEL RECOMMENDATION

Use unleaded petrol only.

The petrol should be 85 to 95 octane by research method. Use recommended fuel additives for longer life of engine components and lower maintenance.

☛ CAUTION

Never mix oil in petrol in the fuel tank.

NOTE

Use fuel additives in petrol as recommended by the respective manufacturer for low carbon deposition.

CHECKS AND TIPS FOR IMPROVING FUEL ECONOMY REGULAR CHECKS

Carry out the periodic maintenance checks as specified in this manual. (page no. 27 to 30)

Regular maintenance checks will save fuel and assure you of trouble-free, enjoyable and safe riding besides keeping environment clean.

Spark plug

A dirty or defective spark plug leads to wastage of fuel due to incomplete combustion. Check, clean and readjust the gap periodically.

Air cleaner element

A dirty air cleaner restricts airflow, increases fuel consumption. Clean the air cleaner elements periodically.

Clutch

Increase of engine rpm during acceleration, without increasing the road speed indicates clutch slip. A slipping clutch will cause high fuel consumption.

If the condition persists even after adjusting the clutch lever play, immediately have the clutch checked by our TVS Motor Company Authorised Distributor/ Dealer or Authorised Service Centre.

Engine cum transmission oil

Dirty or less engine cum transmission oil will increase friction between various parts of the engine and reduce engine life, thereby increase fuel consumption.

Regularly check the oil for contamination and level. It should be between the minimum and maximum level on the gauge. Get it replaced at regular intervals as per maintenance schedule.

CAUTION

Replace the sparkplug every 12000 km for better performance of the vehicle.
Never drive the vehicle with half clutch. This will reduce the life of clutch and affect the performance of the vehicle and fuel economy.

Fuel leak

Check and arrest fuel leaks if any from tank, carburettor and fuel lines.

Tyres

Low tyre pressure has the same adverse effect on a vehicle as of loading the vehicle heavily. The drag on the vehicle will be increased resulting decreased fuel economy.

Further more, handling may be adversely affected. Check the tyre pressure regularly and inflate it to the recommended pressure. Never use tyres, which are worn beyond the permissible limit.

Chain slackness

Check and ensure the drive chain slackness. Excess slackness leads to higher fuel consumption (refer page no. 37).

Wheel freeness

Check and ensure the wheel freeness by rotating the wheel at least once in a week to avoid wastage of fuel.

Fast starting from rest wastes fuel

A racing start from rest at full throttle can waste fuel and damage the engine. It also creates a potentially dangerous traffic situation.

Fast acceleration wastes fuel

Fuel is wasted whenever you suddenly accelerate or apply brake.

Avoid unnecessary idling

While waiting for someone or stopping in signals for long time, if the engine is kept running at idle speed, it causes unnecessary wastage of fuel.

Avoid frequent braking

Anticipate corners and slopes as well as the traffic conditions. Unnecessary frequent braking will reduce the fuel economy.

NOTE

Switch 'OFF' the engine during long waits to protect environment and to reduce the fuel consumption.

MAINTENANCE SCHEDULE

The maintenance schedule indicates the intervals between periodic services. At the end of each interval, be sure to inspect, check, replace, adjust, lubricate and service as instructed. If the maintenance is not done periodically, it will result in rapid wear and severe damage to the vehicle. If the vehicle is used under high stress conditions such as continuous full throttle operation or is operated in dusty climate, certain jobs should be performed more often to ensure reliability of the vehicle. Cylinder head, steering components, suspension, chain and wheel components etc., are key items and require very special and careful servicing. TVS Motor Company Limited strongly recommends that the jobs as per the maintenance schedule be performed by your TVS Motor Company Authorised Distributor or Dealer / Authorised Service Centre.

Periodic inspections may reveal one or more parts that may need replacement. Whenever replacing parts on TVS StaR HLX 150, it is recommended that you use only the **TVS Motor Company Genuine parts.**

☛ CAUTION

Proper running-in and maintenance are mandatory for making certain that your vehicle is reliable and gives optimum performance at all times. Be sure that the periodic maintenance is performed thoroughly in accordance with the instructions given in this owner's manual.

PERIODIC MAINTENANCE SCHEDULE (months or km whichever occurs earlier)

	PERIODIC SERVICES				
Period	1 month	3 months	6 months	9 months	12 months
Km	500 - 750	2500 - 3000	5000 - 6000	8500 - 9000	11500 - 12000
Engine cum transmission oil	R	R	R	R	R
Oil filter	C	–	C	–	C
Centrifugal filter	C	–	C	–	C
Spark plug	C & A	C & A	C & A	C & A	R
Compression pressure	–	–	I	–	I
Air cleaner elements	I & C	I & C	I & C	I & C	I & C
Engine breather pipe	–	C	C	C	C
Carburettor assembly[2]	–	C & A	C & A	C & A	C & A
Tappet clearance[2]	I & A	I & A	I & A	I & A	I & A
Fuel cock sediment bowl	C	C	C	C	C
Hose fuel[3]	Replace every three years				
Clutch cable	I & A	I & A	I & A	I & A	I & A
Throttle cable	–	I & A	I & A	I & A	I & A
Steering play[2]	I & A	I & A	I & A	I & A	I & A
All fasteners[2]	I & TI	I & TI	I & TI	I & TI	I & TI

Period	PERIODIC SERVICES				
	1 month	3 months	6 months	9 months	12 months
Km	500 - 750	2500 - 3000	5000 - 6000	8500 - 9000	11500 - 12000
Drive chain[3]	C, L & A	C, L & A	C, L & A	C, L & A	C, L & A
All bulbs and horn	I	I	I	I	I
Head lamp beam	I & A	I & A	I & A	I & A	I & A
Battery electrolyte level	I & T	I & T	I & T	I & T	I & T
Specific gravity and voltage[5]	I	I	I	I	I
Brakes	I & A	I & A	I & A	I & A	I & A
Tyres (air pressure)	I & A	I & A	I & A	I & A	I & A
Idling CO%[6]	I & S	I & S	I & S	I & S	I & S

R - Replace; I - Inspect; T - Top up; C - Clean; A - Adjust; TI - Tighten; L - Lubricate; S - Set; D - Decarbonise

[2] If necessary

[3] Replace if necessary

[4] Inspect for leak

[5] Recharge if necessary

[6] Idling CO% should be set with the help of exhaust gas analyser and tachometer only

PERIODIC MAINTENANCE SCHEDULE (months or km whichever occurs earlier)

Period Km	PERIODIC SERVICES 15 months 14500-15000	 18 months 17500-18000	 21 months 20500-21000	 24 months 23500-24000	 27 months 26500-27000	 30 months 29500-30000
Engine cum transmission oil	R	R	R	R	R	R
Oil filter	–	C	–	C	–	C
Centrifugal filter	–	C	–	C	–	C
Spark plug	C & A	C & A	C & A	R	C & A	C & A
Compression pressure	–	I	I	I	I	I
Air cleaner elements	I & C	I & C	R	I & C	I & C	I & C
Engine breather pipe	C	C	C	C	C	C
Carburettor assembly[2]	C & A	C & A	C & A	C & A	C & A	C & A
Tappet clearance[2]	I & A	I & A	I & A	I & A	I & A	I & A
Head cylinder / piston[2]	–	D	–	–	–	–
Fuel cock sediment bowl	C	C	C	C	C	C
Hose fuel[3]	Replace every three years					
Clutch cable	I & A	I & A	I & A	I & A	I & A	I & A
Throttle cable	I & A	I & A	I & A	I & A	I & A	I & A
Steering play[2]	I & A	I & A	I & A	I & A	I & A	I & A

Period Km	PERIODIC SERVICES 15 months 14500-15000	 18 months 17500-18000	 21 months 20500-21000	 24 months 23500-24000	 27 months 26500-27000	 30 months 29500-30000
Front fork oil[4]	–	R	–	–	–	–
All fasteners[2]	I & TI	I & TI	I & TI	I & TI	I & TI	I & TI
Drive chain[3]	C, L & A	C, L & A	C, L & A	C, L & A	C, L & A	C, L & A
All bulbs and horn	I	I	I	I	I	I
Head lamp beam	I & A	I & A	I & A	I & A	I & A	I & A
Battery electrolyte level	I & T	I & T	I & T	I & T	I & T	I & T
Specific gravity and voltage[5]	I	I	I	I	I	I
Brakes	I & A	I & A	I & A	I & A	I & A	I & A
Tyres (air pressure)	I & A	I & A	I & A	I & A	I & A	I & A
Idling CO%[6]	I & S	I & S	I & S	I & S	I & S	I & S

R - Replace; I - Inspect; T - Top up; C - Clean; A - Adjust; TI - Tighten; L - Lubricate; S - Set; D - Decarbonise

[2] If necessary [3] Replace if necessary [4] Inspect for leak

[5] Recharge if necessary [6] Idling CO% should be set with the help of exhaust gas analyser and tachometer only

LUBRICATION SCHEDULE

Item \ Interval	Initial 500 - 750 km	Every 2500 - 3000 km	Every 5000 - 6000 km	Every 8500 -9000 km
Throttle grip	–	–	–	Grease
Speedometer gear	–	–	–	Grease
Speedometer cable	–	–	–	Grease
Brake cam	–	–	Grease	–
Drive chain	TRU SPRAY	TRU SPRAY	–	–
Brake pedal shaft	Grease	Grease	–	–
Kick starter pedal pivot	4T oil	4T oil	–	–
Steering stem bearings	..... Clean and lubricate with fresh grease every 12000 km			
Swing arm shaft	..... Grease every 2 years			
Front brake and throttle cables	..... Lubricate at ends using grease in all services			

RECOMMENDED LUBRICANTS

Application	Qty	Manufacturer	Brand
Engine cum transmission oil	1000 ml (after draining) 1200 ml (after disassembly)	Oil shall meet APISL or Superior performance category with SAE 20W 50 grade and confirming to JASO MA/MA2 and API SL grade. Other equivalent brands may be used, if they meet all the performance and specification levels.	
Front fork oil	146 ± 2.5 ml / leg	-	Teleshockab oil
Grease	–	Bechem	Bechem premium

SELF - MAINTENANCE PROCEDURES

BATTERY

Battery is located below the cover frame L. Check the electrolyte level of the battery. It should be between the maximum and minimum level. If the electrolyte level is below the minimum level, add only distilled water upto the maximum level by removing the filler caps.

Clean the battery throughly, apply petroleum jelly to the battery terminals to prevent it from corrosion.

While connecting the terminals, observe the correct polarity. Connect the red wire to the ' + ' positive terminal and black wire to the ' – ' negative terminal of the battery.



CAUTION

Once the battery is charged initially, never add diluted sulphuric acid. Use only distilled water for topping up. Never add tap water. Do not pull battery by its wires while removing. Never check the battery charge by shorting the terminals.

Always connect the positive terminal first and then negative to avoid sparking.

Do not obstruct, bend or change the routing of the air vent tube of battery. Make sure that the vent tube is firmly attached to the battery and the other end is open and clear.

FUSE REPLACEMENT

The fuse case fitted on the battery band contains a 10 A fuse. If the fuse is blown off, turn the ignition switch to 'OFF' position. Open the fuse case and replace the fuse (extra fuse is provided inside the fuse case itself). Turn 'ON' the ignition switch and check for all the battery operated electrical items. Incase the fuse blows off again, consult the nearest TVS Motor Company Authorised Distributor Dealer / Authorised Service Centre.

CAUTION

Do not use vehicle by shorting the wires, without a fuse. This may result in overheating of electricals / wiring and may result in fire.

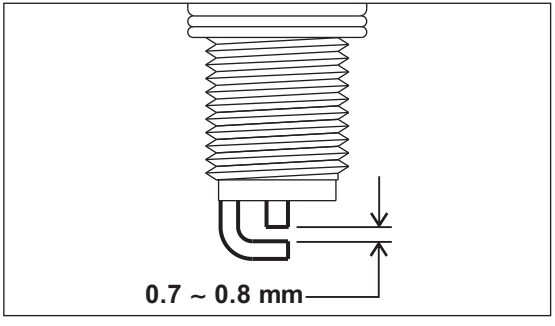
Do not use fuse of higher amperage for the safety of electrical system.

SPARK PLUG

A spark plug with heavy carbon deposits will not produce strong sparks. Hence, as per schedule or, as and when necessary, clean the carbon deposits from the spark plug with a small wire brush or a spark plug cleaning tool.

Readjust the spark plug gap to **0.7 ~ 0.8 mm** using a feeler gauge / wire gauge. **Replace the spark plug every 12000 km.** The carbon deposits on the porcelain tip and its colour tells you whether the combustion of the engine is good or not.

If the colour of tip is white or glazed, dry black or wet black then have the vehicle checked by TVS Motor Company Authorised Dealer or Authorised Service Centre.



Tip colour	Condition of engine
Light brown	Good combustion
White or Glazed	Hot engine / Lean burn
Dry or wet black	Rich mixture / High carbon deposition

Spark plug removal

1. Pullout the suppressor cap from the spark plug.
2. Using the spark plug spanner remove the spark plug.

CAUTION

Always use only recommended make and type of spark plug.

It is advisable to tighten the spark plug by hand till the end and then tighten with the spark plug spanner. Do not overtighten or cross thread the spark plug.

Cover the spark plug hole with cloth when the plug is removed, to prevent dust / water entry.

ENGINE CUM TRANSMISSION OIL

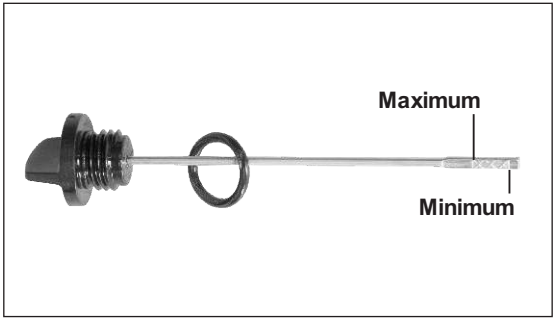
Checking the oil level

Check the engine cum transmission oil level periodically.

1. Place the vehicle on centre stand on a flat surface. Remove the gauge oil level, wipe it clean and insert the gauge oil level in its hole without threading in.

2. Check the oil level. The oil level should be between the minimum and maximum level markings as shown in the figure. If the oil is less than the minimum level, add recommended oil upto the maximum level mark.

CLUTCH ADJUSTMENT



CAUTION

If the vehicle is driven with less engine cum transmission oil, engine components will be severely damaged. Check the oil level before starting to avoid costly damage. Always use recommended oil only.

Clutch lever free play is one of the most important adjustments, which you may need to check in between services for better life of the clutch plates.

The free play of the clutch should be 10 - 15 mm, as measured at the clutch lever end, before the clutch begins to disengage.

Adjust the clutch lever free play periodically by means of clutch cable adjuster at arm clutch release.

If you find the play is more or less, adjust in the following way:

1. Ensure that the engine is cold.
2. Loosen the lock nut (2) holding the clutch cable adjuster (3) adjust the clutch cable adjusting nut (1) 'in' or 'out' to give sufficient play in the clutch cable.
3. After adjusting the play, holding the adjuster nut in the same position lock the lock nut.

CAUTION

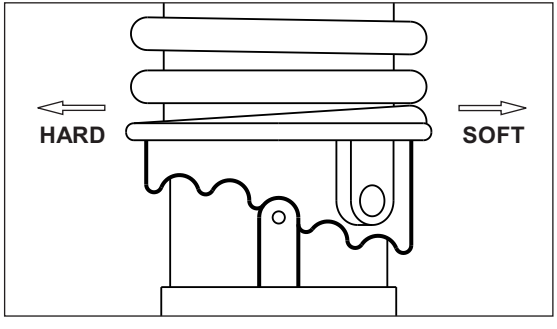
Too much or too less clutch lever free play will damage the clutch plates, thereby affecting the performance of the vehicle.

clutch lever free play should be adjusted only when the engine is cold.

REAR SHOCK ABSORBERS

TVS StaR HLX 150 is provided with 5 step adjustable rear shockabsorbers to meet different road and load conditions. There are 5 notches for adjusting spring load. If the spring is adjusted to the minimum notch, then the shock absorber will be softer which is good for plain smooth roads and light loads. If the spring is adjusted to maximum notch, then it will be stiffer which is good for rough, bumpy roads and heavy loads.

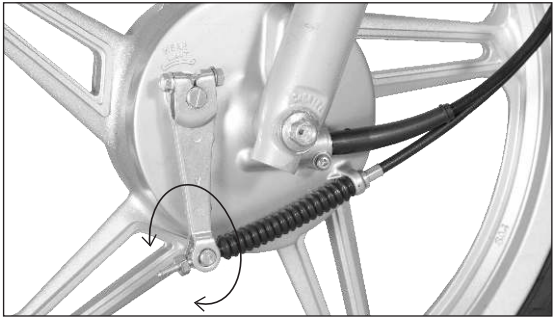
Adjust the spring load by shifting the adjuster to the required notch according to the different load and road conditions. The more you compress the shock absorber spring, the more it becomes stiff.



BRAKES

Front brake

1. Measure the free play of the front brake lever at the lever end as shown in the figure. The distance measured should be 15 ~ 20 mm or as required.
2. If the measured distance is more than the limit then, adjust the adjuster nut provided at the front wheel end to obtain the correct play.
3. Turn the adjuster nut in clockwise direction for reducing the free play or in anti-clockwise direction for increasing the free play of the front brake lever.

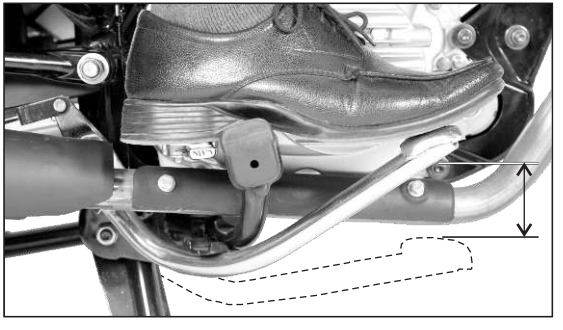


⚠ WARNING

Avoid using front brake while cornering. Brakes are items of personal safety and should always be maintained in proper condition.

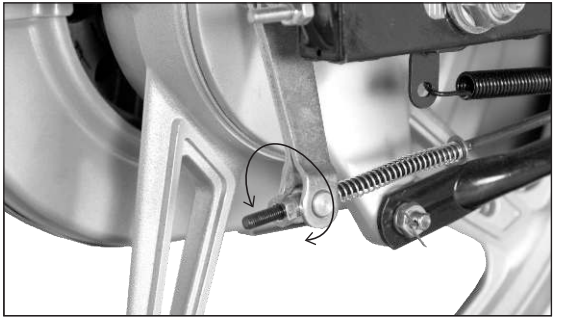
Rear brake

The travel of brake pedal can be adjusted by turning the rear brake adjusting nut 'in' or 'out'. Adjust the free travel of pedal to 15~ 20 mm.



⚠ WARNING

Check the brake pedal play periodically. However the brake play needs to be adjusted more frequently depending upon the usage.

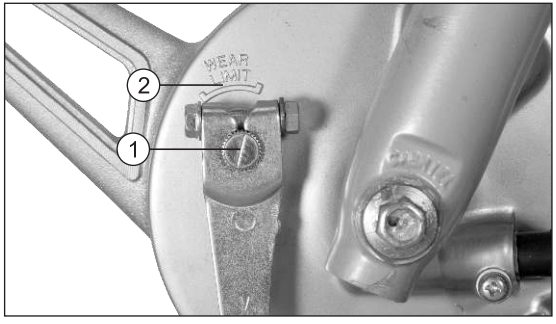


Brake shoe wear indicator

When the brake is applied, the index mark (1) on the cam brake should be within the range on the wear limit indicator (2) on the front and rear brake panel assembly. In case of the mark going beyond, consult the nearest Authorised TVS Motor Company Authorised Distributor or Dealer /Authorised Service Centre.

☛ CAUTION

Replace the brake shoes, if the wear indicator shows beyond the wear limit.



TYRES

Tyre pressure:

Check tyre pressure atleast once in a week if not more frequently. Insufficient air pressure in the tyres not only hasten tyre wear, but also seriously affects the stability of the vehicle.

Under inflated tyres make smooth cornering difficult and over inflated tyres decrease the tyre contact with the ground which can lead to skidding and loss of control. Be sure that the tyre pressure is within the specified limits at all times.

	Solo	Pillion
Front	1.75 kg/cm^2 (25 PSI)	1.75 kg/cm^2 (25 PSI)
Rear	2.25 kg/cm^2 (28 PSI)	2.53 kg/cm^2 (32 PSI)

Tyre tread condition

Operating the vehicle with excessively worn tyres will decrease riding stability and can lead to loss of control. It is recommended to replace the tyre when the tyre wears off to the tyre wear indicator level (indicated by TWI on the tyre).

Tyre rotation direction

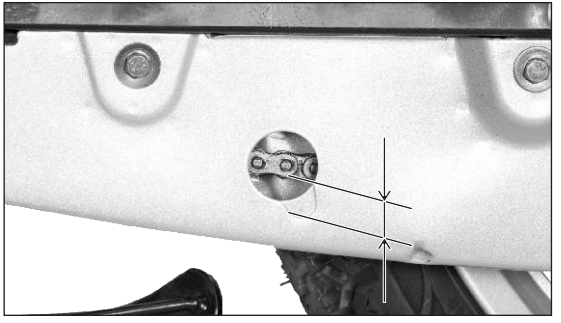
While reassembling the tyre, after removing from the wheel rim, ensure that the arrow mark on the tyre facing the direction of wheel rotation.

DRIVE CHAIN

Proper lubrication and adjustment of drive chain gives long service life of chain. Poor maintenance of chain causes premature wear or damage to the drive chain and sprockets.

The drive chain must be cleaned, checked, lubricated and adjusted at specified intervals mentioned in the maintenance schedule. Higher chain slackness consumes

more fuel. Uncleaned and dry chain (unlubricated) consumes more fuel.



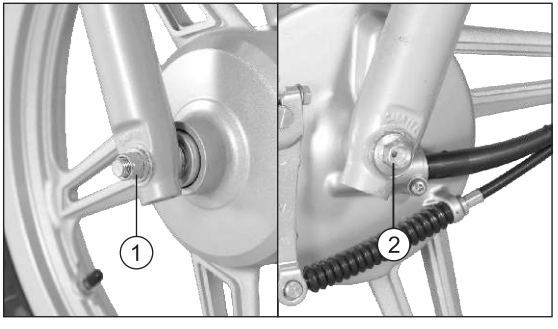
If the vehicle is used under severe conditions and more dusty area, the drive chain must be attended more frequently.

Check, clean, lubricate and adjust the drive chain in the following manner:

1. Place the vehicle on centre stand with the transmission in neutral.
2. Remove the dust seal chain cover.
3. Inspect the drive chain slackness (vertical movement) using the finger as shown in the figure.
4. The slackness of the drive chain should not exceed the limit (20 ~ 30 mm).
5. If the slackness found more, consult the nearest Authorised TVS Motor Company Authorised Distributor or Dealer /Authorised Service Centre.
6. If the slackness found is within the limit, lubricate the drive chain using TRU SPRAY / TRU4 oil and re-fix the dust seal chain cover.

FRONT WHEEL REMOVAL

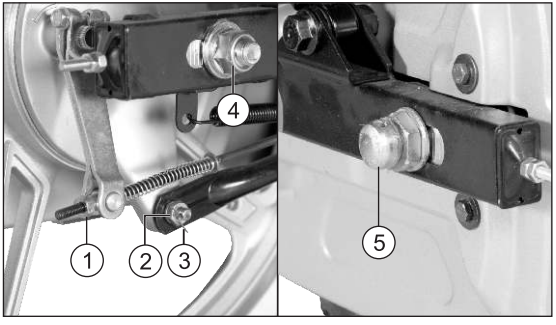
1. Remove axle nut (1) along with a washer from front wheel axle.



2. Pull out the axle (2) along with a washer from wheel assembly.
3. Remove a spacer from right side of the wheel.
4. Place a support (wooden block) below the frame to revent the vehicle from falling.
5. Lift the front fork assembly up, dislocate the brake panel along with cables and slide the wheel out.
6. Reverse the procedure for reassembling. Locate the lug on fork leg L to the slot in the brake panel while reassembling.

REAR WHEEL REMOVAL

1. Remove the rear brake adjuster (1) and disconnect the brake rod.
2. Remove the split pin (2) and the nut (3) from torque link mounting with the brake panel and disconnect the torque link.
3. Remove the axle nut (4). Pull out the axle (5).
4. Tilt the vehicle to the left and take out the wheel assembly along with the brake panel assembly.
5. For locating and reassembling the rear wheel easily, engage gear. This will arrest the free movement of the drum sprocket.
6. Reverse the procedure for reassembly.



⚠ WARNING

Always make sure that whenever the wheel is removed, L and refitted axle nut is properly retightened to the specified torque and chain slackness is adjusted to the specified limit.

Once the split pins are removed, replace them with new ones.

SERVICE RECORD SHEET

Sl.No.	Description	Odometer reading	Job card no. / date	Servicing Dealer's stamp and sign.
1	First service 500 - 700 km			
2	Second service 2500 - 3000 km			
3	Third service 5500 - 6000 km			
4	Fourth service 8500 - 9000 km			
5	Fifth service 11500 - 12000 km			
6	Sixth service 14500 - 15000 km			

SERVICE RECORD SHEET

Sl.No.	Description	Odometer reading	Job card no. / date	Servicing Dealer's stamp and sign.
7	Seventh service 17500 - 18000 km			
8	Eighth service 20500 - 21000 km			
9	Ninth service 23500 - 24000 km			
10	Tenth service 26500 - 27000 km			
11	Eleventh service 29500 - 30000km			

TECHNICAL SPECIFICATIONS

MANUFACTURER : TVS MOTOR COMPANY LIMITED
P.B. No 4, Harita, Hosur - 635 109, India.

ENGINE

Type	: Single Cylinder, 4 stroke, air cooled spark ignition engine
Cylinder bore	: 57 mm
Stroke	: 57.8 mm
Piston displacement	: 147.49 cc
Compression ratio	: 9.7 ± 0.3 :1
Carburettor	: MIKUNI BS 26 (CV type)
Air filter	: Paper filter element
Lubrication system	: Positive displacement gearotor pump
Maximum power	: 8.9 kW @ 7500 rpm
Maximum torque	: 12.3 Nm@ 5000 rpm
Maximum speed**	: 101 km / hr
Engine idling rpm*	: 1400 ± 100 rpm (under warm condition)
Starting system	: Kick starter and Electric starter

TRANSMISSION

Clutch	: Wet - Multi plate type
Transmission	: 4 Speed constant mesh
Gear shift pattern	: All down heel-toe shift
Primary transmission	: Spur gears
Secondary transmission	: Chain and sprockets

GEAR RATIOS

I Gear	: 3.273
II Gear	: 1.857
III gear	: 1.353
IV gear	: 1.100
Primary reduction	: 2.864
Final reduction	: 3.286

* Under warm condition
** with single rider 69 kg

CHASSIS

Dimensions and weights

Overall length	: 2040 mm
Overall width	: 745 mm
Overall height	: 1150 mm
Wheel base	: 1295 mm
Saddle height	: 834 mm
Ground clearance	: 195 mm
Steering angle	: 84°
Caster angle	: 24°
Frame	: Single cradle tubular frame
Kerb weight (with tool kit & 90% of fuel)	: 119 kg
Pay load	: 130 kg
Maximum laden weight	: 249 kg
Front suspension	: Telescopic oil damped
Rear suspension	: 5 step adjustable hydraulic shocks with rectangular swing arm
Trail length	: 75 mm

TYRE

Front tyre	: 2.75 X 17, 41P , DURAGRIP
Rear tyre	: 90/90 X 18, 51P , DURAGRIP
Tyre pressure	
Front	: 1.73 kg/cm^2 (25 PSI)
Rear - Solo	: 2.0 kg/cm^2 (28 PSI)
Rear - Pillion	: 2.25 kg/cm^2 (32 PSI)

BRAKES

Front	: Hand operated, internally expanding 130 mm dia. drum
Rear	: Foot operated, internally expanding 130 mm dia. drum

ELECTRICALS

Ignition system	: 12V (AC/DC), TCI
Spark plug	: BOSCH UR5KC
Spark plug gap	: 0.7 - 0.8 mm
Magneto	: 12V, 60W (fly wheel magneto)
Battery	: 12V, 5 Ah
Earthing	: Negative terminal
Head lamp	: 12V, 35/35W, S2

Tail / brake lamp	: 12V, 5/21W x 1
Turn signal lamps	: 12V, 10W x 4
Speedometer lamp	: 12V, 3.4W x 2
High beam indicator lamp	: 12V, 1.7W x 1
Neutral indicator lamp	: 12V, 1.7W x 1
Turn signal indicator lamps	: 12V, 1.7W x 2
Gear indication	: 12V, 1.7W x 4
Horn	: 12V, DC
Fuse	: 12V, 10A x 1

CAPACITIES

Fuel tank including reserve **	: 12 litres (reserve 2.0 litres)
Engine cum transmission oil and capacity	: 1000 ml
Front fork oil and capacity	: IOC teleshockab oil, 146 ± 2.5 ml per leg

** *The fuel tank is not a measuring instrument and the capacity of fuel tank may slightly vary from the indicated capacity.*

CAUTION

Using the bulb other than the specified rating can result in overloading of the electrical system or premature failure of the bulb.

NOTE

Specifications are subject to change without notice.