TVS



FOREWORD

Dear friend,

Thank you for choosing the all new TVS RAIDER, the Futuristic bike of Performance, Convenience and Technology. As an elite owner of the TVS RAIDER, you are now part of TVS family with millions of satisfied customers.

TVS RAIDER is a supreme combination of contemporary styling, thoughtful engineering and premium features. It is a re-imagination of comfort and convenience like no other bike in the category.

This manual explains the multiple features and operations of your TVS RAIDER. Please read it carefully and follow the instructions to enjoy a fabulous ride.

To prolong your premium ride, we urge you to get your TVS RAIDER serviced only at TVS Motor Company Authorised Distributor or Dealers / Authorised Service Centers.

Wishing you a joyful riding experience!

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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TVS MOTOR COMPANY LIMITED

Operating this vehicle safely is an important responsibility of the rider. To help you make decisions on safety, we have provided necessary 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 the hazards associated with operating or maintaining the vehicle, you must use your own judgement.

You will find important safety information in following form in this manual. These words carry the following connotations:

Warning

Disregarding this message might result in ***injury to the rider or other road users or damage to your vehicle.***

Caution

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

Note

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

Note

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

Your motorcycle is provided with a day time running lamp (DRL). The DRL glows automatically once the ignition is turned ON and goes dim on turning ON the head lamp while the engine is running.

Part Number : N6211600

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The first 1000 km is a crucial part for the life of your motorcycle. 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 motorcycle depends on the special care and restraint exercised during the running-in period. It is especially important that you avoid operating the engine in high speed (RPM), 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 service at 750 ~ 1000 km is most important. During running-in period all the engine components and other parts will set in. All adjustments to be restored, all fasteners to be tightened. Engine and transmission oil to be replaced. Timely performance of the first service will ensure optimum service life and performance from the engine.

Caution

Replacing the engine and transmission oil during first service is most important for better life of engine. Always use TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2) or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2) for better performance and life.

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:

Familiarise yourself with new TVS RAIDER

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

Riding apparel

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

Know your limits

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

⚠ Warning

Two wheeler safety starts with wearing a good quality helmet. *One of the most serious injuries that can happen is a head injury. Always wear an good quality helmet that should fit your head comfortably and securely. You should also have good quality goggles to protect your eyes and help your vision.*

To prevent or minimize accident, never consume alcohol or drugs before or during the operation of your vehicle. Even minimal consumption of these will affect the rider's ability to control the vehicle.

Posture

Proper vehicle riding starts with proper posture.

1. Keep your elbows relaxed and 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 the radius of the corner.

During cornering, reduce speed so as to reduce the effects of centrifugal force. Avoid abrupt application of brake or sudden steering by all means.

⚠ 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 gear 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, while cornering and wet roads 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 / pads or drum / disc 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, increasing 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. Avoid directing the water jet directly towards brake drum/disc pads during water wash.

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 motorcycle.

The addition of u**nsuitable accessories can lead to unsafe operating conditions.** Your friendly Distributor / Dealer will assist you in selecting quality accessories and installing them correctly.

While selecting the accessories, make sure the accessories **should not obstruct lighting, steering, suspension level and ground clearance.**

Additional electrical equipments and controls should not exceed the specified electrical system load of the vehicle (capacity of battery and magneto).

EMISSION CONTROL

All the TVS vehicles are tested in the factory for optimum fuel efficiency and lowest possible CO levels.

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 Distributor or Dealer / Authorised Service Center.

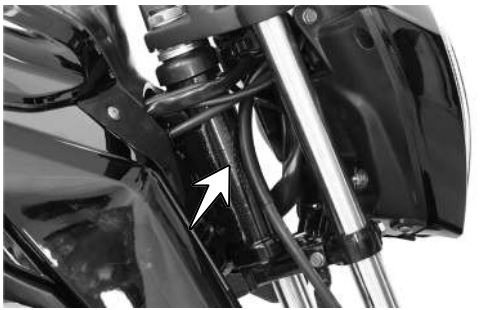
While adequate care is exercised at the factory to ensure that the emissions are within the limits, it is essential for the owner to always maintain the motorcycle in good condition by getting it periodically checked and serviced by TVS Motor Company Authorised Distributor / Dealer or Authorised Service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

Note

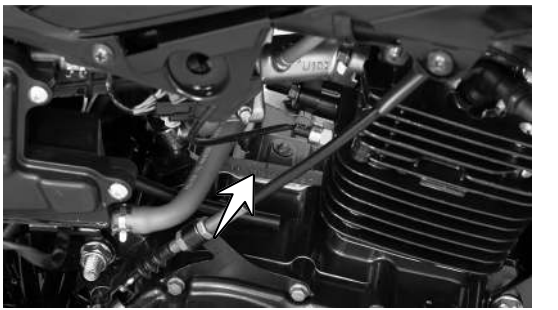
Get your vehicle certified by the Government authorised emission testing stations at specified intervals.

VEHICLE IDENTIFICATION NUMBER

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



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



Engine serial number is stamped on the top surface of the left side crankcase assembly near cylinder block.

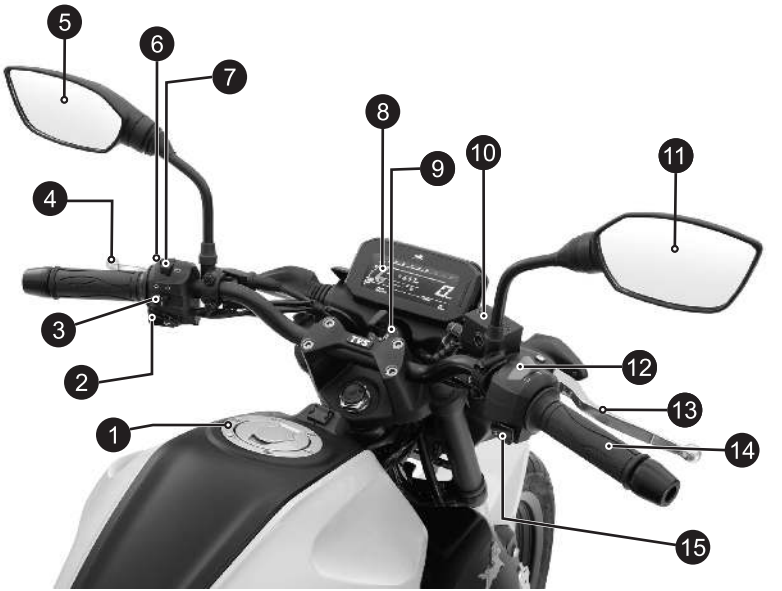
Frame number

Engine number

Control key number

Please fill the above boxes now for future reference

LOCATION OF PARTS - HANDLE BAR



1. Fuel tank cap
2. Horn switch
3. Turn signal lamp switch
4. Clutch lever
5. Rear view mirror L
6. Pass by switch
7. High / low beam switch
8. Instrument cluster
9. Ignition cum steering lock
10. Master cylinder (front)
11. Rear view mirror R
12. Engine cut off switch
13. Front brake lever
14. Throttle grip
15. Electric starter switch

LOCATION OF PARTS - VEHICLE LEFT SIDE



1. Front wheel axle
2. Carburettor assembly
3. Gear shift lever
4. Center stand
5. Side stand
6. Rider foot rest L
7. Mono shock absorber
8. Pillion foot rest L
9. Rear wheel axle

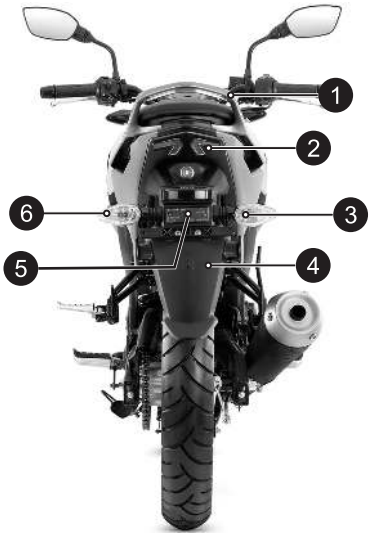
LOCATION OF PARTS - VEHICLE RIGHT SIDE



1. Disk plate front
2. Front wheel axle nut
3. Caliper assembly front
4. Spark plug
5. Gauge oil level
6. Kick starter lever
7. Rear brake pedal
8. Rider foot rest R
9. Pillion foot rest R
10. Muffler assembly
11. Rear wheel axle nut
12. Rear brake adjuster nut

LOCATION OF PARTS - VEHICLE FRONT AND REAR





FRONT

1. Turn signal lamp front L
2. Head lamp
3. Day running lamp (DRL)
4. Front fender
5. Turn signal lamp front R

REAR

1. Pillion handle
2. Tail/ brake lamp
3. Turn signal lamp rear R
4. Rear fender
5. Reflex reflector
6. Turn signal lamp rear L

CONTROL KEY

TVS RAIDER comes with a pair of identical control keys. These keys are to operate ignition cum steering lock, fuel tank cap and seat lock.

IGNITION CUM STEERING LOCK

There are three positions in the ignition cum steering lock. They are:

1. 'OFF' position

All the electrical circuits are turned 'OFF' in this position. Engine will not start. Key can be taken out.

2. 'ON' position

In this position, all the electrical circuits are turned 'ON' and the engine can be started. Key cannot be removed.



3. 'LOCK' position

TVS RAIDER 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'.

Push the key in and turn it to the 'LOCK' position and take out. All the electrical circuits are turned 'OFF' in this position.

Insert the key into the lock and turn it to 'OFF' or 'ON' Position to unlock the steering.

Warning

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

Caution

Leaving the ignition cum steering lock in 'ON' position for a prolonged time will drain the battery when the vehicle is not in use. Switch OFF and take the key out when the vehicle is not in use.

Always lock the steering while parking for safety.

Note

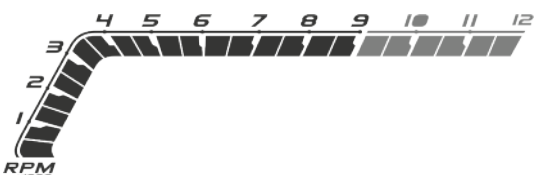
Position lamps glows automatically once the ignition key is turned 'ON' without switching on any lamps. When the ignition switch is turned 'ON' the digital instrument cluster performs self test.

DIGITAL INSTRUMENT CLUSTER



1. Tachometer

Tachometer indicates the engine speed in multiples of 1000 RPM (Revolutions Per Minute).



2. Side stand indicator ( )

The side stand warning indicator turns 'ON' to alert you whenever the vehicle's side stand is applied.

3. Turn signal indicator left ( )

Flashes when the ‘left’ side turn signal indication is activated.

4. High beam indicator lamp ( )

Glows when the head lamp is activated in high beam.

5. Turn signal indicator right ( )

Flashes when the right side turn signal indication is activated.

6. Helmet icon

With every ignition 'ON', helmet icon ' ' blinks for 10 seconds on the right side of the instrument cluster to remind the rider to wear a helmet.

7. ISG malfunction indicator ( )

ISG malfunction indicator will be turned 'ON' when the there is a fault in the ISG system.

If the ISG malfunction indicator is glowing continually after the self check of the speedometer, immediately contact the nearest TVS Motor Company Authorised Distributor or Dealers / Authorised Service Center.

8.Low fuel indication ( )

Low fuel indicator blinks when the fuel level reaches to minimum safe fuel level. It glows continuously and blue line will blink when the fuel comes below minimum safe level.

9. Neutral indicator lamp (N)

Glows when the vehicle is in neutral and goes 'OFF' if the gear is shifted from neutral.

10. Service reminder ( )

If the service is due, whenever the ignition switch is turned 'ON', an icon with spanner symbol blinks for 10 seconds after the self test cycle of speedometer and continues to glow till the vehicle is serviced and reset.

Get the vehicle serviced at TVS Motor Company Authorised Distributor or Dealers / Authorised Service Center.

Note

Service reminder works only based on the distance (km/miles) covered by the vehicle. This is only a reminder indicator. Customers are advised to keep track and follow the service schedule.

11. Low battery indicator

An icon with battery symbol ' ' glows when the battery charges is too low. Contact your nearest TVS Motor Company Authorised Main Dealer / Authorised Dealer.

12. Fuel gauge

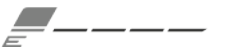
Digital bars indicates the approximate fuel quantity available in fuel tank. There are five bars to indicate the quantity of fuel available in the fuel tank. All the five bars will be displayed when the fuel in the tank reaches above 8.5 liters approximately (full tank).



When the fuel reaches half tank (5.5 liters approx.) the fuel gauge displays only three bars as shown.



The fuel gauge shows only single bar when the fuel reaches reserve level (2.2 liters approx.). Refill the fuel immediately.



Once the fuel level reaches 1.2 liters approximately, no bar will be visible and low fuel indication (serial No. 8) glows continuously and blue line will blink continuously until fuel is filled at least to reserved volume.



If all the fuel level bars in the cluster are start to blink Contact nearest TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center.

13. Gear position indicator / 14. Speedometer / 15.Top speed



13. Gear position indicator

The gear position indicator in the digital display indicates the position of the gears.



14. Speedometer

Indicates the vehicle speed in kilometer per hour or miles per hour.



15. Top speed

Indicates the top speed that the vehicle has clocked in kilometer per hour or miles per hour.



16. Odometer / 17. Lap indicator / 18. Digital clock / 19. Trip meter A, B & F



16. Odometer

Odometer registers the total distance covered by the vehicle in kilometer or mile as per the user's preferred setting. Set the meter in 'ODO' mode to know the odometer reading.



17. Lap indicator

Lap timer indicates the time taken to complete the lap. Refer page no.18 for the entry procedure of lap mode.



Note

Lap timer works only when the lap timer mode is active.

18. Digital clock

Indicates the time in 12 hour format (AM or PM).



Note

If the battery is disconnected and reconnected during service. You may need to reset the time as explained in page No. 19.

19a. trip meter (A & B)

Trip meter indicates the trip distance traveled in kilometer or mile (as per the preferred settings). The digit after the dot mark denotes the one tenth of a kilometer or mile.

Provision to measure two different distance 'TRIP A' or 'TRIP B' is provided for the users to use as per their convenience.



Refer page no.18 for the resetting procedure of Trip meter.

19b. Trip F

This function shows the distance travelled when the low fuel indication symbol ( ) starts blinking and fuel gauge shows only one bar or glows continuously with fuel gauge showing no segment, the display automatically switches to the 'TRIP F' indicator 'TRIP F' meter starts counting from 0 km in km/h mode and 0 miles in mph mode.

If the fuel level remains in minimum safe level, the reading is saved even after the ignition key is turned 'OFF'.

The count stops and clears automatically after a certain distance covered when the fuel level rises above minimum safe level. 'TRIP F' meter cannot be activated or deactivated manually.

At every ignition ON, 'TRIP F' meter will get enabled automatically until fuel level is reached above minimum safe level.



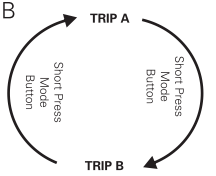
MODE AND SET BUTTONS



The Mode (A) and Set (B) buttons are provided to change between various modes and to set the some of the digital display functions of the instrument cluster. The sequence of modes and their selections are explained in detail below.

Short press the Mode button to access the following modes:

1. Trip A
2. Trip B



Short press duration : <2 sec

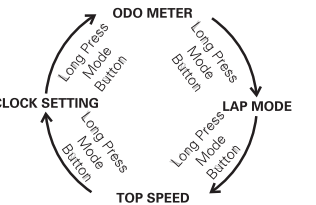
1. In 'Trip A' mode, press the Mode button once to enter 'Trip B'.
   - To reset any of the trip meter while ensuring the display is in '' or '', press and hold the Set button for a few seconds.
2. Press the Mode button once to change the display to 'TRIP A' mode again.
3. TRIP A mode by default whenever the ignition is turned 'OFF' and 'ON'. Ignition OFF to ON previous mode will be displayed.

Note

Above mode changes are possible only when the vehicle is in static condition for safety.

On long pressing the Mode button, the following modes can be accessed.

1. ODO METER
2. LAP MODE
3. TOP SPEED
4. CLOCK SETTING



Long press duration : 3 to 5 sec

1. In 'ODO' mode, long press the Mode button to enter 'LAP' mode.
   - Values cannot be reset in LAP mode.

2. In 'LAP' mode, long press the Mode button to enter 'Top speed' mode.
   - To reset any of the Top speed while ensuring the display is in 'Top speed' mode, '' press and hold the Set button for a few seconds.
3. In 'Top speed' mode, long press the Mode button to enter 'Clock setting'.

Clock setting

- On entering the clock setting mode, the digital clock starts blinking. Now, press the Set button. On pressing the set button, the hour digits of the clock starts blinking and enables you to change the hours. Press the 'Mode' button to increase the hours while hour digits are blinking.
- On pressing the 'Set' button again the hours gets set and the minute digits starts blinking.
- Now, press the 'Mode' button to increase the minutes while minute digits are blinking.
- Once again press the 'Set' button so that the minutes of the clock is set and the hours format 'AM' or 'PM' starts blinking.
- Press the 'Mode' button to change the hour format either to set 'AM' or 'PM'.
- Press the 'Set' button once again to set clock and long press Mode button to come out of clock setting mode.

4. Press the Mode button once to change the display to ODO mode again.

Note

Above mode changes are possible only when the vehicle is in static condition for safety.

If no input is given for more than 20 secs during clock setting, the instrument cluster comes out of this setting mode automatically.

Illumination Control :

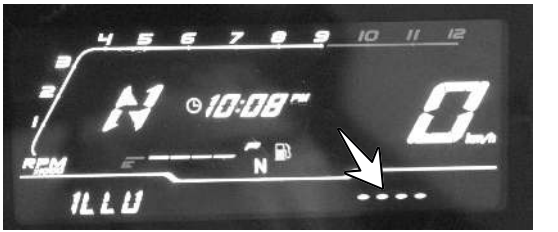
Customer can control the brightness of their speedometer.

Two modes of control available:
Day condition (6.00 am to 6.00pm): 100 % (Not changeable)
Night condition (6.00pm to 6.00am): 100 % (Default) - three step control possible

Illumination Setting Mode:

Ensure the display is in LAP mode.

Mode / Set Switch	Press Duration	Action
Set	Long press	Enter illumination mode.Once entered 'ILLU' will be displayed in Trip zone and current illumination level will be shown in Odo display zone '----'
Mode	Short press	Reduce the illumination percentage
Set	Long press	Enter illumination value will be updated and exit from illumination mode and move to Odo mode



MPH and KMPH setting

Default setting is in KMPH.

Mode / Set Switch	Press Duration	Action
Mode	> 10 sec	Ignition key in OFF position, press and hold the mode button and then turn ON ignition key and keep holding mode button for more than 10sec to change unit from Km to miles and vice-versa.



LED HEAD LAMP

TVS RAIDER comes with a LED head lamp which glows automatically once the engine is started. The head lamp beam (high / low) can be controlled by pressing the 'high / low beam switch.



Caution

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

HANDLE BAR LEFT SIDE

1. Horn switch

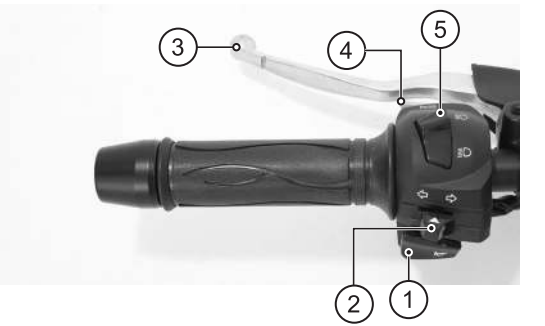
Press the switch ' ' to operate the horn.

2. Turn signal lamp switch

Slide the turn signal lamp switch to left ' ⇦ ' or right side ' ⇨ ' to operate the respective turn signal lamps (LH/RH). Press the switch to turn 'OFF'.

3. Clutch lever

Use the clutch lever to disengage the drive to the rear wheel while shifting the gears. Squeezing the lever towards grip disengages the drive.



4. Pass by switch

Press the switch to flash the head lamp high beam. It is used to give signal to the vehicles coming from opposite direction while overtaking other vehicles during day and night. During head lamp ON condition, if pass switch is pressed then head lamp shall change the state of beam switch (High beam to Low beam or Low beam to High beam based on the beam control switch.

5. Beam control switch

The head lamp beam (high/low) can be controlled by pressing the beam control switch.

Press the switch towards ' ≡D ' to turn-on the head lamp high beam or press the switch towards ' ≡D ' to turn-on the head lamp low beam.

Warning

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

It is strongly recommended to ride the vehicle in 'low' beam during day.

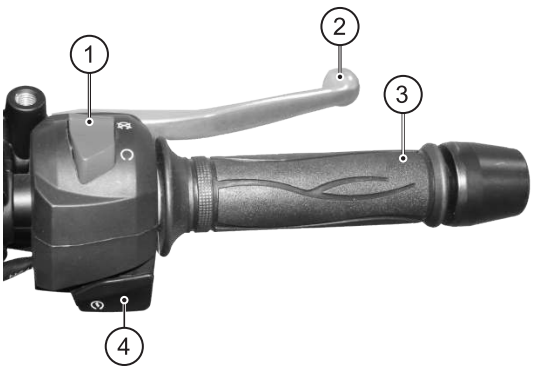
Note

Head lamp glows only when the engine is in running.

HANDLE BAR RIGHT SIDE

1. Engine cut off switch

It is used to switch off ' ⊗ ' the engine but to keep other DC system active. The ignition circuit is disabled, preventing the engine from being restarted. To restart the engine, return the switch to the ' ⟲ ' position.



2. Front brake lever

The front brake is applied while squeezing the front brake lever gently towards the throttle grip. The brake lamp glows on application of front brake.

3. Throttle grip

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

4. Electric starter switch

Press the electric starter switch ' ⟲ ' to start the engine electrically with the transmission is in neutral or by depressing the clutch lever when the transmission is in gear.

Note

Ensure to turn ON the engine cut-off switch before starting the vehicle.

Release the electric starter switch immediately after pressing.

FUEL TANK** CAP

Flush type fuel tank cap (1) is provided in TVS N360C. To open the fuel tank cap, lift the protection lid (2), insert the control key into the lock and turn it in clockwise and lift the cap. Press the cap back to its original position, rotate the key in anti-clockwise direction and lock the cap. Close the lid at the end.

To avoid accumulation of water in the fuel tank, a small drain hole and a pipe is provided in the fuel tank lid cavity so that the water entering through the lid is drained out through a hose.



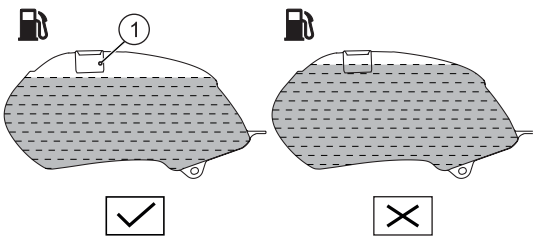
** The fuel tank is not a measuring instrument and the capacity of the fuel tank may slightly vary from the indicated capacity.

Warning

Do not smoke while refueling. Do not use cell phones while refueling. Avoid spilling of fuel on the hot engine. Refill petrol in well ventilated area. Switch off the engine while refueling as petrol is highly inflammable. After refilling close the cap properly.

EVAPORATIVE EMISSION CONTROL SYSTEM

This vehicle is fitted with Evaporative Emission Control System (EVAP). If there is any abnormal jerk, startability issue are felt in the vehicle or noise due to sudden escape of gas while opening the fuel tank cap, immediately report to the TVS Motor Company Authorised Distributor or Dealers / Authorised Service Center.

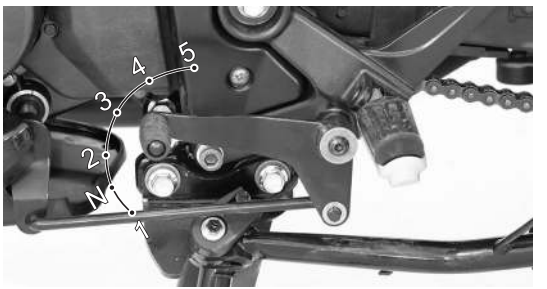


Caution

Do not clean the vehicle by laying down on floor, to avoid fuel entry into EVAP system.

Never fill fuel beyond the fuel tank inlet (1). Filling above the inlet may result in improper breathing of fuel tank which leads to difficulty in starting as well as improper running of the vehicle. Whenever refueling the bike fill only the recommended quantity of fuel.

GEAR SHIFT LEVER



TVS RAIDER is equipped with a 5 speed constant mesh transmission. Neutral (N) position of the transmission is indicated by the warning light on the speedometer.

To shift the transmission from neutral to first gear, press the gear shift lever down.

To change it to the second gear, lift the lever up. Lifting the lever up repeatedly engages all the gears in succession up to the fifth gear.

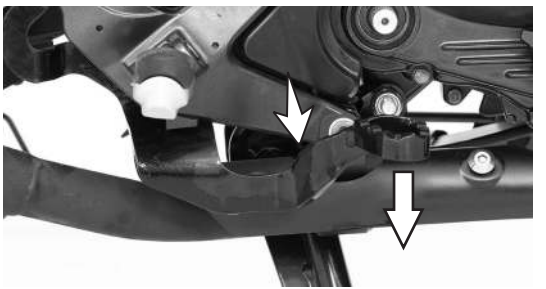
The gear position indicator on the instrument cluster dial indicates the current position of the gear and the gear shift indicator arrows guides you to up shift or down shift the gear at pre defined engine rpm.

Caution

Never shift gears without disengaging the clutch and releasing the throttle. Failure to comply this will lead to rough shift or jerk while shifting the gears. Remember to return to neutral position before restarting the engine.

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 front brake also will be applied while applying the rear brake. The brake lamp glows on application of brake.



Warning

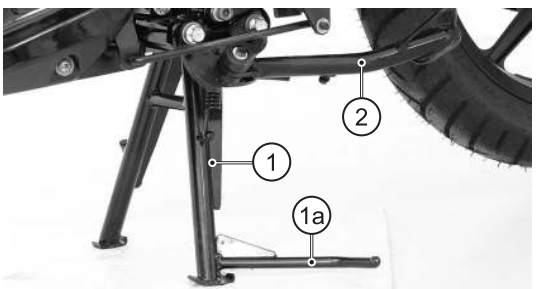
Brakes are items of personal safety and should always be maintained in proper condition.

CENTRE STAND AND SIDE STAND

TVS RAIDER is equipped with a centre (1) and side stand (2). To place the vehicle on the centre stand, 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 with adequate effort. Ensure both the legs of centre stand are touching the ground before placing the vehicle on the stand.

Side stand can be operated by sitting on the vehicle with your left foot by pushing it away from the vehicle till it stops.



Warning

Always release the side stand to its up position before starting the vehicle. Else, the vehicle will not get start.

If the side stand is applied with the engine running condition, the vehicle will get OFF incase if the vehicle is in gear or when the gear is shifted from neutral.

Caution

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

SEAT

The seat lock is located at the rear end of the vehicle bellow the tail lamp assembly.





Rear seat (passenger seat)

To remove the rear seat, insert the ignition key into the seat lock and turn it in clockwise direction. Pull and take out the seat by lifting it from the rear end and gently tapping it on the front end Now, you can access the small utility box, tool kit, first aid kit etc. Reverse the removal procedure to re-assemble the seat.

Note

Ensure the proper seating of seat assembly in the frame after reassembling.

TOOL KIT

To assist you in performing certain aspects of periodic maintenance and emergency repairs, a tool kit is supplied along with the vehicle.

A tool kit is fixed with the passenger seat using a band. Remove the passenger seat as explained in the previous page to access them.

Tool kit consists one number each of the following:

1. 12x14 mm open end spanner
2. Combination screw driver bit
3. Screw driver handle
4. Tool bag

Note

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 Distributor or Dealers / Authorised Service center.



Warning

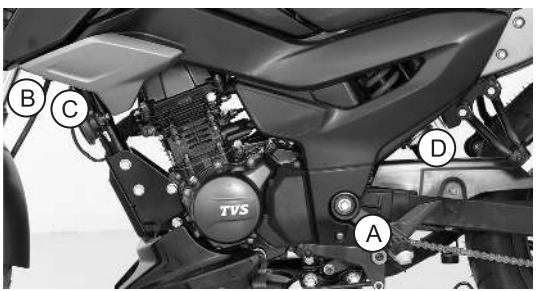
Do not remove the tool kit from the vehicle. Always ensure to keep them along with the vehicle.

COVER FRAME L

To access the battery assembly and the fuses, cover frame L need to be removed. Follow the procedure given below for removing and re-fixing cover frame.

For removing :

1. Remove the screw (A) from the bottom mounting of the cover frame.
2. Loosen the snap revet screws and pull out the snap rivets (B, C & D) from the cover frame locking



3. Take out the cover frame by gently.

For reassembling:

1. Locate the lugs of the cover frame at to the holes provided in the fuel tank assembly and the frame while ensuring the availability of the cushion in the holes.
2. Gently press the cover frame lugs into the holes.
3. Install the mounting screw (A) and snap revets (B & C).
4. Ensure the proper seating of the cover frame in its position.

Note

While re-fixing the cover frame, ensure the availability of rubber cushion in the fuel tank hole.

SMART PHONE CHARGER

Location for fixing a smart phone charging USB socket is provided at the front of the fuel tank bellow the handlebar. The smart phone charging socket by the company can be fitted on your vehicle on chargeable basis. Ask your Dealer to fix the same if required. Please follow the guidelines mentioned below for using it properly:-

DO's

1. Ensure that no water enters into the unit, by closing the USB flap properly.
2. Use the USB, if approved standard USB cable is used for charging mobile.



4. Do make sure the flap is not damaged while opening / inserting the USB cable.

DON'Ts

1. Do not leave the USB charging flap open / partially closed.
2. Do not attempt to use / charge any other device, other than mobile phones. Only one mobile phone should be charged at a given time.
3. Do not try to force the USB connector in, check whether it is inserted in the appropriate direction, to prevent the damage to the charger.
4. Do not charge your mobile when engine is off.

Caution

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

The rubber flap in the unit has been designed to prevent water entry and is not replaceable. ***No warranty for charger in case of rubber flap cut.***

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. 43)
Fuel	Enough fuel for the planned distance of running
Tyres	Correct pressure (page no. 50) Adequate tread depth / No cracks or cuts
Battery	Proper working of speedometer, tail lamp, license plate lamp, brake lamp, turn signal lamps, horn and electric starter
Speedometer	Performing self check
Lighting	Proper working of head lamp high beam / low beam and high beam indicator
Steering	Smooth movement / No play or looseness
Throttle	Correct free play of cable / Smooth operation
Clutch	Correct free play of cable (page no. 44) / Smooth and progressive action
Brakes	Availability of brake fluid and proper working of brake. Correct lever and pedal play (page no. 46 and 49)
Wheels	Free rotation
Drive chain	Slackness and lubrication of chain (page no. 51)

STARTING THE ENGINE

As you turn the ignition switch to the 'ON' position, the instrument cluster and the warning lights will go through the self-diagnostic cycle. During this phase, make sure that all the warning lights on the cluster comes on.

The following conditions must be verified before starting the engine.

- The engine cut off switch is in '⟳' position.
- The gear is in neutral.
- If gears are engaged, the clutch lever is pulled.

Press the start button without applying the throttle or with minimal throttle. As soon as the engine starts, release the start button.

⚠ Caution

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

⚠ Warning

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

SETTING THE VEHICLE IN MOTION

1. Depress the clutch lever and engage first gear by pressing the gearshift lever down.
2. Open the throttle slowly and simultaneously release the clutch lever gently and gradually. The vehicle starts moving forward.
3. As the vehicle picks up speed, shift to the next higher gear by closing the throttle, applying the clutch and lifting the gear shift lever up.
4. Release the clutch lever and open the throttle smoothly. Select the required gears in a similar manner.

Using the transmission

The transmission is provided to keep the engine to 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 the rider 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 brake by shifting to a lower gear.

STOPPING AND PARKING

1. Close the throttle completely and apply both the brakes simultaneously.
2. Down shift the gears with clutch lever pressed / disengaged as the 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.

Warning

Reduce speed to a safe limit before turning/cornering. Do not apply brake while turning/cornering. Do not disengage clutch before braking.

Warning

Since the engine and exhaust system becomes very hot, make sure to park the vehicle in a place where pedestrians or children are not likely to touch the hot surface. Do not park near dry grass or any other flammable resources which might catch fire.

FUEL RECOMMENDATION

Use unleaded petrol only.

The petrol should be minimum 91 RON. Use recommended fuel additives for longer life of engine components and lower maintenance. Petrol mixed with ethanol will have impact on engine components. Contact your TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center for usage.

Caution

Never mix oil and petrol in the fuel tank. Always fill fuel from reputed and reliable fuel stations.

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 (refer page no. 37 to 38).

Regular maintenance checks will save fuel ensuring trouble-free, enjoyable and safe riding besides keeping the environment clean .

Spark plug

A dirty or defective spark plug leads to wastage of fuel due to incomplete combustion. Inspect and clean the spark plug if necessary. **Replace the spark plug every 12000 kms. Always use recommended spark plug only.**

Air cleaner element

A dirty air cleaner element restricts airflow and increases fuel consumption. **Replace the element every 12000 kms.**

Paper and foam type air cleaner element is used in your motorcycle. In case of any abnormalities (heavy dust clogging, damage), replace the filters earlier than the specified interval. Ensure to replace the filters as set.

Clutch

Increase in engine rpm during acceleration, without increase in road speed indicates clutch slip. A slipping clutch will cause high fuel consumption and overheating of engine.

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

Engine cum transmission oil

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

Regularly inspect the engine cum transmission oil for correct level and top-up if necessary. Get it replaced at regular intervals as per the maintenance schedule. Always use TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2 or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2) oil only

Caution

Never drive the vehicle with the clutch lever pressed. This will reduce the life of clutch and affect the vehicle performance and fuel economy.

Fuel leak

Check and arrest fuel leak if any from tank, carburettor and fuel lines. Loss of fuel due to leak will drain the fuel tank completely.

Tyres

Low tyre pressure has adverse effects on the vehicle. The drag on the vehicle increases resulting decreased fuel economy. Further more, handling may be affected adversely.

Check the tyre pressure regularly (weekly) and inflate them to the recommended pressure (refer page no. 50). Never use tyres which are worn out beyond the permissible limit.

Chain slackness

Check and ensure drive chain slackness. Excess slackness leads to higher fuel consumption (refer page no. 51).

Wheels free movement

Check and ensure the free movement of wheels by rotating the them 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 will waste fuel and damage the engine. It also creates a potentially dangerous traffic situation. Fuel is wasted whenever the rider 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 and frequent braking reduces the fuel economy.

Note

Please note that the on-road mileage of TVS RAIDER is dependent on several factors like road condition, quality of fuel, riding speed, operation of clutch and brake, tyre inflation, maintenance / timely servicing of vehicle, load etc. and hence will differ from the mileage given under standard test conditions such as made in recognised institutes.

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 area, 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 Center.

Periodic inspections may reveal one or more parts that may need replacement. Whenever replacing parts on TVS RAIDER, 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. Make sure that the periodic maintenance is performed thoroughly in accordance with the instructions given in this owner's manual.

In more dusty areas, the air filter element requires early replacement than the mentioned kilometers to avoid costly damages to the engine.

PERIODIC MAINTENANCE SCHEDULE (months or km whichever occurs earlier)

Item	Service Period from the date of sale km / Activities	Service 1st 1000 30 - 45 days	2nd 6000 6 months	3rd 12000 12 months	Every 6000 6 months	Remarks
Engine cum transmission oil	Replace	R	R	R	R	Inspect & Top up every 3000 km
Centrifugal filter	Clean	–	–	C	–	Clean every 12000 Km
Spark plug	Replace	–	I & A	R	I & A	Replace every 12000 km
Air cleaner element	Replace	–	I & C	R	I & C	Replace every 12000 km
Carburettor assembly	Clean & adjust	–	–	C & A	–	C & A every 12000 Km
Tappet clearance	Inspect & adjust	–	I & A	I & A	I & A	I&A every 6000 km If required
Fuel hose with respective clamps	Inspect	I	I	I	I	
Clutch & Throttle play	Inspect & adjust	I & A	I & A	I & A	I & A	
Throttle grip	Lubricate	–	–	L	–	
Steering smooth operation / play	Inspect, adjust & lubricate	I	I	I	I	Adjust & lubricate if issue persists required
Front fork oil	Replace	–	–	–	–	Replace every 18000 Km
Front and rear suspension	Inspect for proper functioning	I	I	I	I	
All fasteners	Inspect & tighten	I & TI	I & TI	I & TI	I & TI	
Drive chain	Clean, lubricate & adjust	C, L & A	C, L & A	C, L & A	C, L & A	C, L & A every 3000 km
All bulbs, horn and switches	inspect for proper functioning	I	I	I	I	

Contd...

PERIODIC MAINTENANCE SCHEDULE (months or km whichever occurs earlier)

Item	Service Period from the date of sale km / Activities	Service 1st 1000 30 - 45 days	2nd 6000 6 months	3rd 12000 12 months	Every 6000 6 months	Remarks
Head lamp beam	Inspect & adjust	I	I	I	I	Adjust if required
Battery voltage	Inspect & charge if necessary	I	I	I	I	Recharge if necessary
Brake effectiveness / play	Inspect and Adjust	I & A	I & A	I & A	I & A	
Brake cam	Clean	–	–	–	–	Inspect & clean if required
Brake fluid	Inspect, top up & replace	I & T	I & T	I & T	I & T	Top up if required and
						replace every 24000 Km
Master cylinder cups	Replace	–	–	–	–	Replace every 24000 Km
Wheels & Tyres	Inspect and Set	I	I	I	I	Inspect wheel for free rotation, Inspect tyre for wear and set pressure
Cebtre / side stand pivot	Lubricate	L	L	L	L	
Evaporative emission control system						

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

RECOMMENDED LUBRICANTS

Application	Qty	Manufacturer	Brand
Engine cum transmission oil	1000 ml (During regular service) 1100 ml (incase of disassembly)	TVS Motor Company	TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO Ma2) Or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2)
Front fork oil	155 ± 2ml / leg (GIL make)	IOC	Teleshockab oil
Disk brake fluid	–	TVS Girling	DOT 3 / DOT 4
Grease	–	Bharath petroleum IOC Bechem	MP Grease no. 3 Servo Gem no. 3 Bechem premium grade 3
Chain lubricant	–	TVS Motor Company	TRU SPRAY

SELF - MAINTENANCE PROCEDURES

Maintenance Free (MF) Battery

Battery is located below the cover frame L. Follow the procedure given below for accessing the battery.:-

1. Place the vehicle on center stand on a flat surface and open the cover frame L as explained in page no. 29.
2. Check the battery voltage as per the schedule. If the voltage measured is less than 12.4 Volts, charge the battery using **recommended MF battery** charger at TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center.



3. Adding any additional electrical accessories other than TVS recommend ones, may lead to disqualification of warranty coverage.
4. While connecting the terminals, observe the correct polarity. Connect the red wire to the '+' terminal and black wire to the '—' terminal of battery

Incase of any abnormality or for removal of battery from the vehicle, contact TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center.

Caution

Never check the battery charge by shorting the terminals.

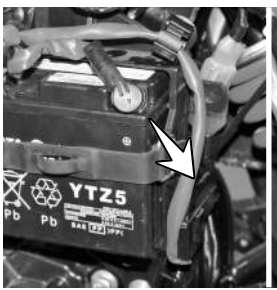
Always connect the positive terminal first (red wire) and then negative (black wire) to avoid sparking.

The inversion of the battery wires can damage the battery and the electrical system.

FUSE

Non-working of electrical systems may be due to safety fuse failure. Short circuit or overload in the electrical system are the main causes for fuse failure. Follow the procedure given below for inspecting and replacing the fuse.

1. Open the cover frame L as explained earlier (refer page no. 29).
2. The fuse case fitted near the battery contains one 10A and one 15A fuses with a spare.
3. Take out the fuse case from the battery band and open its cover if electric start is not working please check with whether 40A fuse is good or not. Pull out the required fuse.





4. Inspect the fuse for failure. If found blown, replace it with new one with the same rating (additional fuses are provided inside the fuse case itself).
5. Close the fuse case and re-fix case into the battery band.
6. Turn 'ON' the ignition switch and check for proper functioning of electrical systems. Incase the fuse fails again, consult the nearest TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center.

Caution

*Do not use vehicle by **shorting the wires without fuse.** This may result in overheating of electrical items / wiring and may result in fire.*

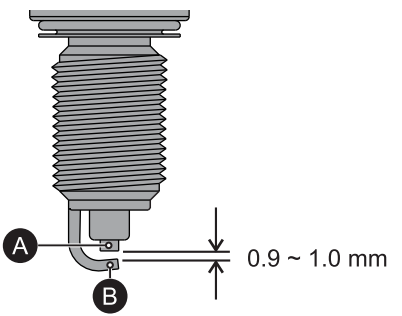
Do not use fuse of higher amperage than specified for the safety of electrical system.

SPARK PLUG

1. Wipe and clean the dust and mud around the spark plug mounting to avoid their entry inside the cylinder.
2. Pullout the suppressor cap from spark plug. Remove the spark plug using a plug spanner.

A spark plug with heavy carbon deposits will not produce strong sparks. Hence, only if necessary, remove the carbon deposits from the spark plug with a small wire brush or spark plug cleaning tool.

Inspect the spark plug electrodes (A) and (B) for any corrosion. If found any, replace the spark plug with a new one.



Inspect the spark plug gap. The gap should be 0.9 to 1.0 mm. If the gap is found to be more than the limit replace the spark plug with a new one.

After cleaning and inspecting the gap, reinstall the spark plug and tighten by hand to avoid cross threading. Finally tighten using the spanner. Do not over tight or cross thread the spark plug. After reassembling the plug fix back the suppressor cap and ensure its proper fitment.

Caution

Always use only recommended make and type of spark plug. ***Replace spark plug every 12000 km.***

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

It is advisable to tight the new spark plug by hand till the end and then loose. Again re-tight the spark plug by 1/8 of rotation after sealing by using only the hand tool.

Since the hook type spark plug is used, it is not advised to adjust the plug electrodes as it may damage the electrodes.

ENGINE CUM TRANSMISSION OIL LEVEL

Check the engine cum transmission oil level periodically.

1. Place the vehicle on centre stand on a flat surface. Wipe-off the surroundings of gauge oil level.
2. Remove the gauge oil level and wipe it clean.
3. Fix the gauge back to its mounting hole. Do not thread in.
4. Take out the gauge and check the oil level.
5. The oil level should be between minimum and maximum level marks of the gauge as shown in the figure.



6. If the oil level is less than the minimum level, add TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2) or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2) upto the maximum level mark.
7. Wipe out the oil traces with a clean cloth to prevent dust accumulation and assemble back the gauge oil level.

Caution

If the vehicle is driven with less engine cum transmission oil, the engine components will be severely damaged. Check the oil level as per the schedule to avoid costly damage.

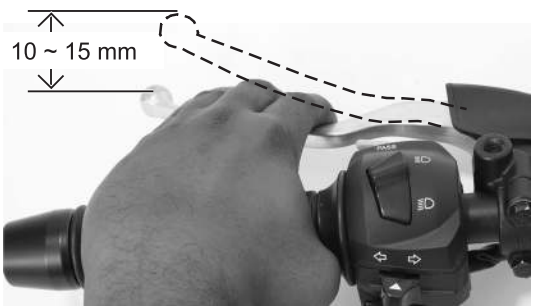
Do not fill excess oil as it may cause the oil leak. Always use 'TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2) or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2)

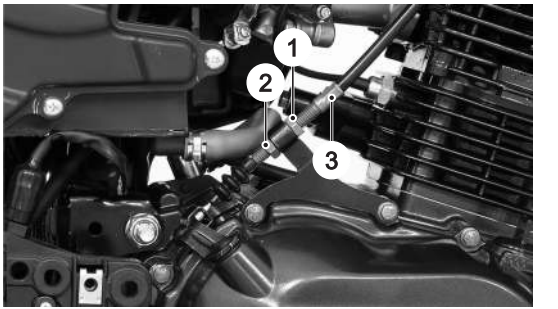
CLUTCH ADJUSTMENT

Clutch lever free play is one of the most important adjustment which you may need to check in-between services for better life of the clutch plates. The free play of the clutch lever 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 the free play is found more.

1. Ensure that the engine is cold.





2. Loosen the lock nut (2) while holding the clutch cable adjuster (3). Adjust the clutch cable adjuster nut (1) 'in' or 'out' to give sufficient play in the clutch lever.
3. After adjusting the play, hold the adjuster nut (1) in the same position, tighten the lock nut (2).

Caution

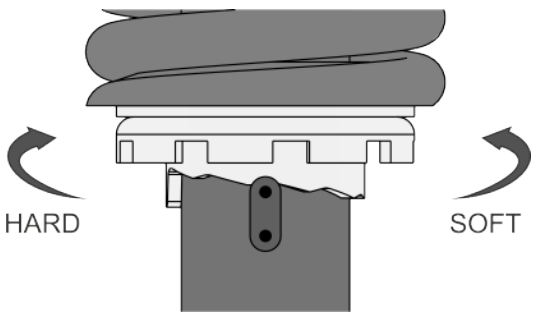
Too much or too less clutch lever free play will damage the clutch plates, thereby affecting the performance of the vehicle. Adjust the clutch lever free play only when the engine is cold.

REAR SHOCK ABSORBERS

TVS RAIDER is provided with 5 step adjustable rear shock absorbers to meet different road and load. 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 light loads. If the spring is adjusted to maximum notch, then it will be stiffer which is good for heavy loads.

Adjust the spring pre-load by shifting the adjuster to the required notch according to the different load conditions.



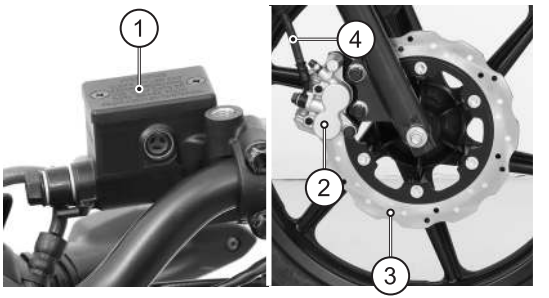
The more you compress the spring, the suspension becomes more stiff.



BRAKES

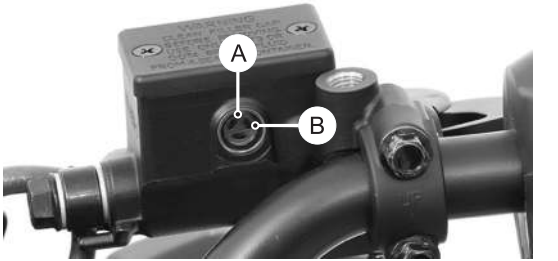
Front brake

You can observe a master cylinder (1) on the right side of the handle bar, a caliper assembly (2) fitted to the fork leg R, a disc (3) to the front wheel and a high pressure hose (4) connecting the master cylinder and the caliper assembly.



⚠ Warning

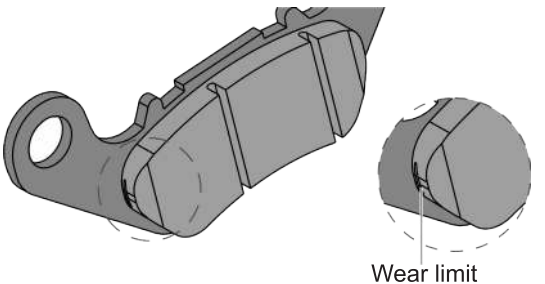
Brakes are items of personal safety and should always be maintained in proper condition.



1. Check the master cylinder brake fluid level through the view piece glass (A).
2. Brake fluid level always should be above the 'MIN' mark (B) provided on the master cylinder view piece glass when the master cylinder is parallel to the ground.
3. If the brake fluid level is below the mark or while applying brake if you feel the brake is more spongy or ineffective due to air entry, contact TVS Motor Company Authorised Main Dealer or Authorised Dealer for topping-up the brake fluid, air bleeding and other brake related inspections.

Brake pad wear indicator

Visually check the brake pads wear. If the wear is found beyond the wear indicator groove as shown in the figure then, replace the brake pads

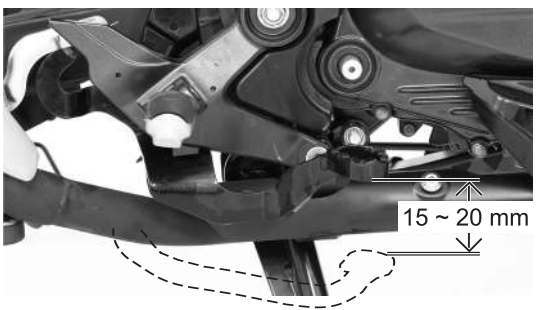


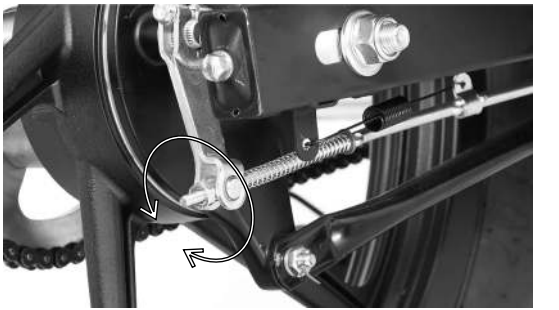
Caution

The brake pads must be replaced as a set if the brake pad wear limit indicator shows beyond the wear limit.

Rear brake

1. Measure the free play of the rear brake pedal at the pedal end as shown in the figure.
2. The free play of the brake pedal before the engagement of brake should be between 15 ~ 20 mm.
3. If the measured free play is more than the limit, adjust the nut provided at the rear wheel end to obtain the correct play.
4. Turn the adjuster nut clockwise to reduce the free play or turn it in anti-clockwise direction to increase the free play.



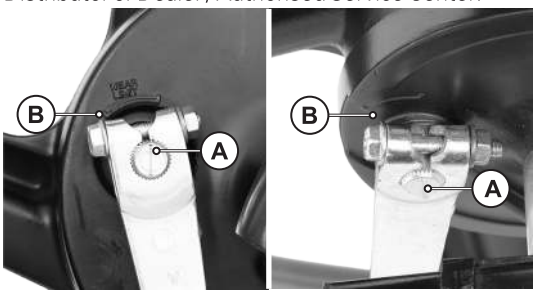


Warning

Please remember that the rear brake lever free play adjustment to be done only after adjusting the front brake lever play in case of front drum brake type vehicle.

Brake shoe wear indicator

When the brake is applied, wear limit index mark (A) on both front and rear cam brake should be within the range of wear limit indicator (B) on panel assembly. Incase the index mark (A) is going beyond the wear limit (B), replace the brake shoes as a set, with the help of the nearest TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center.



Caution

Replace the brake shoes as a set, if wear limit index mark (A) exceeds beyond the range of wear limit indicator (B) even after indexing the lever.

However, if cam lever adjustment goes beyond certain range, then index the cam lever to next slot (serration tooth) with the help of the nearest TVS Motor Company Authorised Distributor or Dealer / Authorised Service Center, to utilize remaining shoe life until wear limit index mark (A) exceeds beyond the range of wear limit indicator (B).

TYRES

Tyre pressure:

Check the 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 decreases the tyre contact with the ground which can lead to skidding and loss of control. **Lower tyre pressure consumes more fuel.** Be sure that the tyre pressure is within the specified limits at all times.

	Solo	Pillion
Front	1.75 kg/cm² (25 PSI)	1.75 kg/cm² (25 PSI)
Rear	2.25 kg/cm² (32 PSI)	2.50 kg/cm² (36 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 wheel rim, ensure that the arrow mark (A) provided on the tyre, faces the direction of wheel rotation.

⚠ Warning

*The tyre inflation pressure in cold condition and the tyre thread condition are extremely important for the performance and safety of the rider. Check the tyres frequently for inflation pressure as well as the wear pattern on it. U**se of a tyre other than the standard will cause instability.***

Tyre puncture

Your motorcycle is fitted with a tubeless tyre on both front and rear wheel. Incase of any puncture / tyre damage, it is advised to visit the nearest tyre manufacturer Dealer or the tyre repair shops who knows the repairing method of tubeless tyre.

It is not necessary to remove the tyre from wheel rim always to attend a puncture, Even though it there is need of tyre removal, it is strongly recommended to use a tyre removal / fitment machine. If at all, tyre levers needs to be used, the levers should be free from sharp edges. Care should be taken not to damage the tyres and rims.

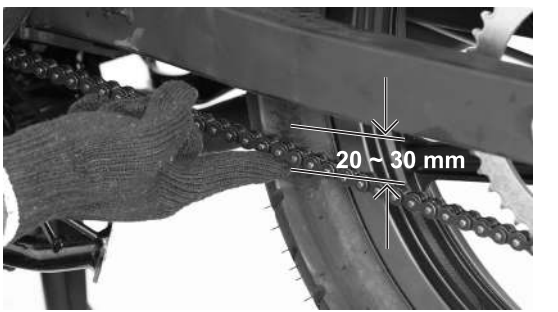
Caution

The side walls of the tubeless tyre which in contact with the wheel rim are only seals the air inside the wheel assembly. Hence care should be taken not to damage the side walls of the tyres during removal / reassembly.

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. Poor chain maintenance also affects mileage of the vehicle. The drive chain must be cleaned, checked, lubricated and adjusted at specified intervals mentioned in the maintenance schedule.

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

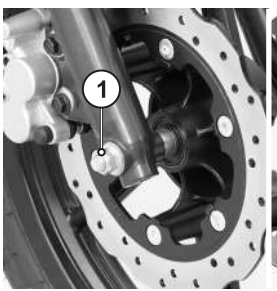


Check, clean, lubricate and adjust the drive chain in the following manner:

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 (maximum 20 ~ 30 mm). Excess slackness consumes more fuel.
5. If the slackness is found more, contact TVS Motor Company Authorised Main Dealer / Authorised Dealer for adjustment.
6. If the slackness found is within the limit, clean the chain with dry cloth and lubricate using TRU SPRAY / TRU4 oil.
7. Refit the dust seal chain cover.

FRONT WHEEL REMOVAL AND REASSEMBLY

1. Remove the axle nut (1) along with a washer.
2. Pull out the axle (2) from the front wheel.
3. Incase of disc brake model, remove the spacers from both side of the wheel. Incase of drum brake model remove a spacer from right side of the wheel.
4. Place a support below the frame to prevent the vehicle from falling and lift the vehicle up.
5. Incase of drum brake model, dislocate the wheel assembly along with the brake panel.





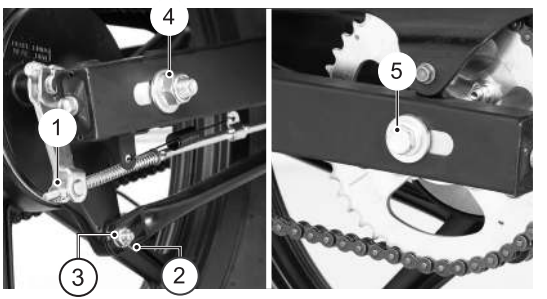
6. Separate the brake panel from the wheel and take out the wheel.
7. Incase of disc brake model, carefully dislocate the disc from the caliper assembly and slide the wheel out.
8. Reverse the procedure for reassembling.

⚠ Warning

Always make sure that whenever the wheel is removed, axle nut is properly re-tightened to the specified torque.

REAR WHEEL REMOVAL AND REASSEMBLY

1. Remove the rear brake adjuster nut (1) and disconnect the brake rod from the rear brake lever.
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) along with a washer.
4. Pull out the axle (5) along with a washer and take out the spacer bush from the rear wheel assembly.



5. Tilt the vehicle to the left and take out the wheel along with the brake panel. Separate the brake panel from the wheel.
6. For locating and reassembling the rear wheel easily, engage the gear. This will arrest the free movement of the drum sprocket.
7. Reverse the procedure for reassembly.

Caution

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

Warning

Always make sure that whenever the wheel is removed, axle nut is properly re-tightened to the specified torque.

STORAGE PROCEDURES

For storage of your motorcycle for longer period of over a month and above, we recommend to carry out the following steps:

1. Clean the vehicle thoroughly. Park the vehicle on centre stand.
2. Warm up the engine and drain engine cum transmission oil. Store the oil, if new, in a dust free container.
3. Empty the fuel tank.
4. Remove the spark plug and feed in several drops of engine cum transmission oil through spark plug hole. Crank the engine few times and reinstall the spark plug.
5. Remove the battery, store it away from direct sunlight and freezing temperatures.
6. Place a suitable support at the bottom of the frame so that both the tyres are off the ground. This will ensure better tyre life.
7. Cover up the vehicle completely with a clean tarpaulin or any other suitable cover. Store the vehicle inside a garage or similar area to avoid damage due to dust and rain. Make sure that the storage area is well ventilated and free from any source of flame or spark.

Caution

Do not park the vehicle on a slope or soft ground or else it may fall down.

During storage, the battery must be recharged on a TVS Motor Company recommended battery charger at least once in a month.

Warning

The exhaust system becomes hot after a run. Park the vehicle in a place where pedestrians or children are not likely to touch the vehicle.

TAKING THE VEHICLE OUT OF STORAGE FOR REGULAR USE

1. Take the vehicle out of the garage and clean it thoroughly.
2. Remount the battery after bench charging if required.
3. Fill the engine cum transmission oil TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2) or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2) and check the oil level using gauge oil level.
4. Lubricate the parts as instructed in the periodic maintenance schedule.
5. Fill up fresh petrol in the fuel tank.
6. Check and inflate the tyres to the specified tyre pressure.
7. Check and correct the points mentioned in page no. 31.
8. Turn the ignition switch to 'ON' position. Start the engine and run in idle for a few minutes and ride out.

Caution

Avoid using alkaline solution like detergent soaps for washing. This may damage head lamp and other lamp assemblies.

RECOMMENDED TIPS WHEN TAKING A LONG TRIP OF MORE THAN 500 KM:

A) Please keep the following items for use in case of emergency:

1. **Tool kit complete.**
2. **Recommended spark plug one number.**
3. **Turn signal lamp bulb one each.**
4. **Throttle, clutch and front brake cable one each.**
5. **Drive chain lock - one number.**

B) Precautions to be taken for the journey:

1. **Ensure engine cum transmission oil and brake oil level are up to the level mark.**
2. **Adequate fuel in fuel tank (refer page no. 14).**

C) Check your motorcycle for the following:

1. Tightness of all bolts and nuts with correct torque value.
2. Fitness of tyres / tyre pressure / tread depth.
3. All bulbs, indicators and horn functioning.
4. Smooth functioning of all cables and their free play.
5. Smoothness of steering operation.
6. Drive chain and sprocket condition. Chain adjustment.
7. Front / rear brake functioning and rear brake lamp switch adjustment.
8. Front fork for any abnormality.
9. Spark plug gap and condition of spark plug.
10. Air filter element cleanliness.
11. Lubrication of all items mentioned in the periodic maintenance schedule.
12. Intactness of EVAP system hoses and canister.
13. Any other job as necessary.
14. Have your vehicle checked at any TVS Motor Company Authorised Distributor or Dealer or Authorised Service Center.

Caution

Long journey are to be taken only after the running-in period of 1000 km.

SCHEDULED SERVICE RECORD

Sl.No.	Description (kms or month whichever of the two occurs early from the date of purchase)	Odometer reading	Job card no. / Date	Servicing Dealer's stamp and sign.
1	**1st service** between (a) **750 - 1000 km** or (b) **1 month**			
2	**2nd service** between (a) **5500 - 6000 km** or (b) **6 months**			
3	**3rd service** between (a) **11500 - 12000 km** or (b) **12 months**			
4	**4th service** between (a) **17500 - 18000 km** or (b) **18 months**			
5	**5th service** between (a) **23500 - 24000 km** or (b) **24 months**			
6	**6th service** between (a) **29500 - 30000 km** or (b) **30 months**			
7	**7th service** between (a) **35500 - 36000 km** or (b) **36 months**			

SCHEDULED SERVICE RECORD

Sl.No.	Description (kms or month whichever of the two occurs early from the date of purchase)	Odometer reading	Job card no. / Date	Servicing Dealer's stamp and sign.
8	**8th service** between (a) **41500 - 42000 km** or (b) **42 months**			
9	**9th service** between (a) **47500 - 48000 km** or (b) **48 months**			
10	**10th service** between (a) **53500 - 54000 km** or (b) **54 months**			
11	**11th service** between (a) **59500 - 60000 km** or (b) **60 months**			

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	:	53.5 mm
Stroke	:	55.5 mm
Piston displacement	:	124.76 cc
Compression ratio	:	10.0 : 1
Carburettor	:	Ucal BS 25
Air filter	:	Dry paper filter with dry foam
Oil filter	:	Wire mesh
Lubrication system	:	Positive lubrication
Maximum power in kW	:	12.9 ps @ 8000 rpm
Maximum torque in Nm	:	11.5 Nm @ 6500 rpm
Maximum speed	:	110 km / h
Engine idling rpm	:	1500 ± 100 rpm (under warm condition)
Starting system	:	Electric starter (i Touch) / kick starter

TRANSMISSION

Clutch	:	Wet - Multi plate type
Transmission	:	5 speed constant mesh
Gear shift pattern	:	5 Speed, 1 down 4 up
Primary transmission	:	Spur gears
Secondary transmission	:	Chain and sprockets

GEAR RATIOS

I gear	:	2.917
II gear	:	1.857
III gear	:	1.333
IV gear	:	1.050
V gear	:	0.880
Primary reduction	:	3.25
Final reduction	:	3.286

CHASSIS

Overall length	:	2080 mm
Overall width	:	767 mm
Overall height	:	1028 mm
Ground clearance	:	181 mm
Wheel base	:	1326 mm
Kerb weight (with toolkit and 90% of fuel)	:	120 kg
Pay load	:	130 kg
Maximum laden weight	:	250 kg
Steering angle	:	88°
Caster angle	:	25°
Frame	:	Mono tube cradle
Front suspension	:	Telescopic front fork with antifriction bush
Front fork stroke	:	130 mm
Rear suspension	:	Monoshock

TYRE

Tyre size			
Front			
	Disc	:	80/100 - 17 (Tubeless)
Rear			
	Drum	:	100/90 - 17 (Tubeless)
Tyre pressure			
Front		:	1.75 kg/cm^2 (25 PSI)
Rear - solo		:	2.00 kg/cm^2 (28 PSI)
Rear - dual		:	2.25 kg/cm^2 (32 PSI)

BRAKES

Front	:	Hand operated, 240 mm dia. disc
Rear	:	Foot operated, internally expanding 130 mm dia. drum

ELECTRICAL

Type	:	Fly wheel magneto, AC
Ignition system	:	DC - Digital TCI
Spark plug	:	BOSCH UR5KCW
Spark plug gap	:	0.9 ~ 1.0 mm
Battery type	:	12V, 4 Ah (MF Battery)
Generator	:	Fly wheel magneto 12V, 150W

ELECTRICAL

Body earthing	:	Negative terminal
Head lamp	:	12V, 10Wx3 LED
Tail / brake lamp	:	12V, 0.3W/2.5W x 14 LED
Turn signal lamp	:	12V, 10W x 4
Instrument panel	:	LCD / LED indicators
Horn	:	12V, DC x 1
Fuse	:	12V, 15A x 1(main), 12V, 10Ax1 (DC load) & 12V, 40Ax1 (starting)

CAUTION

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

CAPACITIES

Fuel tank capacity	:	10 liters (RON 92 and above & unleaded)**
Reserve	:	Auto fuel cock
Engine cum transmission oil grade	:	TVS TRU4 FULLY SYNTHETIC (SAE 10W30 API SL JASO MA2) or TVS TRU4 PREMIUM (SAE 10W30 API SL JASO MA2)
Engine cum transmission oil capacity	:	1000 ml (During regular service) 1100 ml (incase of disassembly)
Front fork oil grade	:	IOC / Castrol teleshockab oil
Front fork oil capacity	:	155 ± 2 ml per leg
Brake fluid	:	TVS Girling DOT 3 / DOT 4

NOTE

Specifications are subjected to change without notice.

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