WARNING

To avoid damage from the scooter's electronic fuel injection system, do not remove or install a battery wire when the ignition switch is at the "ON" position.
Read this manual carefully

This Owner’s Manual contains important information on safety, operation and maintenance of your KYMCO SPADE 150i scooter. Anyone who operates your scooter should carefully read and understand the contents of this manual before riding the scooter. For your safety, understand and follow all of the warnings contained in this Owner’s Manual and the labels applied to your scooter. This Owner’s Manual should be considered a permanent part of the vehicle, keep it with your scooter at all times. ON- ROAD USE ONLY This scooter has been designed to be used on the road.

**Particularly important information is called out in this manual by the following icons and notations:**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>The SAFETY ALERT symbol with the exclamation point in the triangle means ATTENTION! BE ALERT! YOUR SAFETY CAN BE AFFECTED.</td>
</tr>
<tr>
<td>⚠️ WARNING</td>
<td>Failure to follow instructions associated with a WARNING symbol could result in severe injury or death to the rider, a passenger, a bystander, or a person inspecting or repairing the scooter.</td>
</tr>
<tr>
<td>⚠️ CAUTION</td>
<td>A CAUTION symbol indicates that special precautions must be taken to avoid damaging the scooter.</td>
</tr>
<tr>
<td>■ NOTE</td>
<td>The NOTE symbol indicates key information about a procedure or to clarify an operation.</td>
</tr>
</tbody>
</table>
Important Information

Vehicle ID Number

1. Engine Number:
   Engine number of this model is imprinted underneath the left crank box as shown in Fig. (1):

2. Chassis Number:
   Chassis number is imprinted on the Frame as shown in Fig. (2):

Theft Prevention Branding

Coping with theft prevention policy of the government to prevent your motorcycle from being stolen, the vehicle is branded with a theft preventive code, identical to Engine Number, (see Figure below) at proper positions.

◎ This figure is an example, actual location depends on the physical vehicle.
## Contents

1. Precautions on Safe Driving  
2. Motorcycle Parts  
3. Operation of Dashboard and Controller Functions  
4. Starting the Engine  
5. Proper Riding Method  
6. Checks Before Riding  
7. Periodical and Simplified Maintenance and Troubleshooting  
8. EPA Authorities and Maintenance  
9. Specifications  

The actual product must prevail if any content in this manual differs from the actual product.
## 1. Precautions on Safe Driving

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</table>
Checks before driving

2. Driver must wear a helmet, gloves, goggles, etc.
3. Avoid wearing clothes that may impede drive safety (such as long skirt, flared trousers, etc.).
4. Excessively wide and loose sleeves may be caught by the brake lever and is extremely dangerous.
5. Operation of brake lever must in no case be obstructed.
6. Daily and regular checks are necessities.
7. Visually check tire externals for any foreign object or abnormal wear.

8. Exhaust gas from the muffler contains carbon monoxide which is harmful to human body.
9. Start the engine only in a well ventilated location.
1. The exhaust muffler is very hot after the engine stops, avoid touching it.
2. Avoid dry grasses or flammables when parking the motorcycle, for the prevention of fire risks.
3. The exhaust pipe is very hot when parking the vehicle; make sure the exhaust pipe faces a wall or away from any pedestrian, to avoid burn injury.

HOT, do not touch.

4. While driving, hold handlebars with both hands and place feet on footrests; the rear rider must hold the front rider’s waist with both arms and put feet on rear footrests.
5. The rear rider must avoid touching the hot exhaust pipe while mounting/dismounting, to prevent from being burnt.
1. Making an acute turn or driving with single hand is strictly forbidden.
2. Abide by traffic rules.
3. Operability of the handle varies in conditions with or without an extra load.
4. Avoid overloading when carrying objects. Make sure that objects are fixed properly. Extra care must be taken for a safe driving.

Small hold is limited for a load of 1kg maximum.
1. Never smoke when filling fuel.
2. Stop engine when filling fuel.
3. Vehicle functionalities are related to its structure; arbitrary modification may deteriorate operability of vehicle, causing shortened service life and obstructed driver safety.
4. Arbitrary modification of a vehicle is an illegal action forbidden by law. Never try to make any modification.
5. Modification of vehicle may result in a nullified warrant.
**Caution**

- Natural mental relaxation and comfortable clothes are essentials to a safe driving.
- Abide by traffic rules, do not be anxious, relax and drive carefully.
- Do not wear loose clothing that may affect drive safety and cause a danger. (e.g., long skirt, flared trousers, etc.)
- The exhaust pipe is extremely hot when you drive or within 30 minutes after driving the vehicle; avoid touching it to prevent any burn injury.
- Avoid dry grasses or flammables when parking the vehicle, for the prevention of fire risks.

### Clothing

- Button up long sleeves, snug tidily, prevent cuffs from hooking on the brake lever.
- Buckle up chin-belt when wearing a helmet.
- Hold the Handlebar with both hands when riding. Do not ride by single hand for this is extremely dangerous.
- Wearing flat shoes is safer.
Loading

- It is forbidden to install a carrying basket or bracket on the front header. Carrying anything in front of the vehicle will surely block the headlight and significantly affect driving safety.

- Maximum loading of front or rear luggage box is 5kg.
2. Motorcycle Parts

2-1. Right View
2-2. Left View
Right View

1. Headlight
2. Front RH winker
3. Steering stem lock
4. Horn
5. Head Light switch / Starting Button
6. Tail light /Brake Light
7. Rear RH winker
8. Main Stand
9. Exhaust Muffler
10. Rear Brake Tread Lever
11. Front Brake tread Lever

※Your vehicle may differ from the picture depending on the model.
Left View

12. Meters
13. Clutch lever
14. Front LH winker
15. Main Switch
16. Gear Tread Lever
17. Side Stand
18. High/Low Beam Switch / Winker Switch / Horn Button
19. Tank Cap
20. Rear LH winker
21. Reflex Reflector

※ Your vehicle may differ from the picture depending on the model.
### 3. Operation of Dashboard and Controller Functions

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<td>Main Switch</td>
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<td>3-4.</td>
<td>Steering Lock, Electrical Start Button</td>
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<td>3-5.</td>
<td>Headlight Switch, Hi/Low Beam Switch</td>
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<td>3-6.</td>
<td>Direction Light Switch, Horn Button</td>
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<td>3-7.</td>
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</table>
Dashboard

1. **Speedometer (Mile):**
   Standard speed is in mile per hour (mph)

2. **Adjustment Button:**
   For adjusting time and setting odometer.

3. **Fuel Replenishment Indicator:**
   Replenish with #92 or #95 unleaded gasoline as soon as possible when this indicator lights up (to prevent from fuel pump damage caused by dry running).

4. **Speedometer (Km):**
   Standard speed is in Km per hour (km/h).

5. **Tripmeter:**
   Total travel in kph or mph.
   *Zeroing of Travel Meter:
   1. Pressing ADJ. button for about 2s to cycle among the 3 modes: ODC→TRIP→Blank.
   2. While in TRIP mode, press ADJ and MODE buttons to zero the meter.
   (EURO 4 models would not show code)

6. **Odometer:**
   Indicates engine RPM, the reading must be multiplied by 1000rpm.

7. **Oil change indicator:**
   It lights up when you traveled 2000km, indicating an oil change is required.
   *Zero the oil change mileage:
   1. Pressing ADJ. button for about 2s to cycle among the 3 modes: ODC→TRIP→Blank.
   2. While in Blank mode, press ADJ and MODE buttons to zero the mileage; and the indicator will go off.
8. **Neutral gear indicator:**
   With engine in Neutral Gear, this indicator lights up when power is switched ON.

9. **LH/RH Direction Light Indicator:**
   This indicator blinks when direction light is activated.

10. **High Beam Indicator:**
   Turn on the Headlight for nighttime driving. Left Handlebar Switch allows control of High/Low Beam switchover. This indicator lights up in High Beam mode.

11. **Engine Inspection Indicator:**
   It lights up for 2s after KEY ON and then goes off automatically, indicating the vehicle is normal. If it fails to light up for 2s after KEY ON, or lights up constantly or blinks after 2s, it is indicating that the vehicle is faulty; you need to go to a service center for service.

12. **Battery Low Indicator:**
   This indicator lights up after starting if battery power is weak, indicating a check of charging system or battery replacement is required. This indicator must go off immediately after starting; if it stays lighting up during driving, go to a KYMCO dealer for check-up. (EURO 4 models would keep lighting)

13. **Cell Phone Socket (12v)**

---

**CAUTION**

- When Fuel Indicator on the Fuel Meter lights up, replenish with #92 or #95 unleaded gasoline as soon as possible.
- When Battery Indicator lights up, the battery is weak and immediate check-up and/or recharge is required.
Main Switch 1

**OFF**
- At this position, engine electrical power is cut off, engine stops.
- You may remove the key when stopped.

**ON**
- At this position, engine electrical power is connected; you can start the engine.
- The key stays in when driving, and cannot be taken out.
Steering Stem Lock
For theft prevention, lock the steering stem when parking your motorcycle.

**Locking Method:**
Turn the steering stem fully to the left; then turn the key CCW 180° to engage the lock.

**Unlocking Method:**
Turn the key clockwise 180° and the lock is released automatically.

Starting Button
While using electrical starting, pull the clutch lever tightly before pressing the Starting Button.

**CAUTION**
- After locking, gently turn the steering stem to verify if the lock is engaged.
- Do not park your vehicle at locations where traffic may be hindered.
High/Low Beam Toggle Switch

For switching over between high beam and low beam:

- : Indicates High Beam
- : Indicates Low Beam

Switch it to position for beaming the far. When there are vehicles coming in the opposite direction or when you are riding in urban areas, switching to may affect the view of other drivers, therefore position must be used.

Beam indicator on the dashboard lights up when High Beam is activated. For switching over between High and Low beams, just press this toggle switch.

Horn Button

With Main Switch turned to ON position, pressing the Horn Button will activate the horn.
**Direction Light Switch**

Use Direction Lights when making a turn or changing a lane. Direction lights blink when the switch is cut in.

- : To this position for a left turn ①
- : To this position for a right turn ②
- : To release, push the button in. ③

**Cell Phone Socket (12v)**

* This power socket is used for charging a mobile device. Do not use it for other electrical products, especially for high power ones like a cigarette lighter.

* Do not use the socket on rainy days, or else a short circuit or burn may occur.

* Make sure the rubber cover is covered when not in use, preventing ingress of water which may cause a damage.

* Make sure to use a power cable of a proper length for your mobile device; excessive length may interfere with steering operation and endanger driving safety.

**CAUTION**

- This socket is for mobile device only; do not use it for other electrical products or damage may occur.
4. Starting the Engine

4-1. Electrical Start
4-2. Handling a Tumbled Vehicle
Turn Main Switch to “ON” position

Start the Engine
- When starting the engine with the electrical motor, do not turn the Throttle Grip; pull the clutch tight and push the starting button, engine will now be started.

>Note> For starting difficulties with a cold engine or after a long time without using the vehicle, key on for 2-4 seconds and key off, repeat the procedure several times to warm up the fuel pump for normal fuel supply.

CAUTION
- Check if Neutral Indicator lights up when turning the key into ON position; check also if Horn and Direction Lights work normally.

CAUTION
- Keep your finger off the Starting Button immediately when the engine starts.
- Do not press the Starting Button when engine is running or the engine may be affected adversely. Never use the Starting Button more than 4 seconds each time.
• Make a short warm-up (2-3 minutes) after starting a cold engine.
• Never run the engine in high rpm when not loaded, for ensuring a prolonged service life of engine.
• Make sure a short warm-up is provided after starting a cold engine.

Handling a tumbled vehicle

To re-start a stopped engine after a tumble of vehicle, you need to turn the Main Switch off and turn it on again.

WARNING

• To prevent potential fire hazard caused by overflowed gasoline of a tumbled vehicle, the engine will be stopped automatically when the vehicle tilts more than 65°.
## 5. Proper Riding Method

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<th>Section</th>
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<td>5-2. Correct Driving</td>
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<td>5-3. Running-in a New Engine</td>
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<tr>
<td>5-4. Driving on Rainy Days</td>
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<tr>
<td>5-5. Parking Precautions</td>
</tr>
<tr>
<td>5-6. Theft Prevention of Vehicle</td>
</tr>
</tbody>
</table>
Clutch and Gear Shifting

1. Pull tight the clutch lever and turn down throttle grip, then press the shift lever with left foot to engage Gear 1.
2. Slowly increase Throttle Grip and gradually release clutch lever at the same time, the vehicle will start to move forward slowly.
3. When speed increases gradually, you may shift to a higher gear by lifting the shift lever with left foot, from Gear 1 to Gear 2, one at a time, until reaching Gear 5. Refer to the following table for a proper timing to shift the gear. See Fig. 1.
4. When you slow down, or climb a slope or haul a heavy load, you need to shift to a lower gear, by pressing the shift lever once with left foot. For example, now is Gear 5, press once to Gear 4; once more to Gear 3, and so on, until reaching Gear 1. Refer to the following table for a proper timing to shift the gear. See Fig. 1.
5. To shift to Neutral Gear, press down a half travel from Gear 2 or lift up a half travel from Gear 1, until the Neutral Indicator lights up.

WARNING

- When shifting to a lower gear, do not shift too quickly, or engine may be damaged or rear wheel may skid, leading to an accident.
- Make the proper gear shifting according to the figure and the speed reference for gear shifting on the right.

<table>
<thead>
<tr>
<th>Upward Shift Fig.1</th>
<th>Km/h (mph)</th>
<th>Eash press-down of shift lever</th>
<th>Km/h (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear 1→Gear 2</td>
<td>10(6)</td>
<td>Gear 5→Gear 4</td>
<td>40(25)</td>
</tr>
<tr>
<td>Gear 2→Gear 3</td>
<td>20(12)</td>
<td>Gear 4→Gear 3</td>
<td>30(19)</td>
</tr>
<tr>
<td>Gear 2→Gear 4</td>
<td>30(19)</td>
<td>Gear 3→Gear 2</td>
<td>20(12)</td>
</tr>
<tr>
<td>Gear 4→Gear 5</td>
<td>40(25)</td>
<td>Gear 2→Gear 1</td>
<td>10(6)</td>
</tr>
</tbody>
</table>
Proper Riding

Activate direction light before taking on the road; make sure of traffic safety behind you before driving out.

Speed Regulation

Speed regulation is achieved via Throttle Grip.

Turning Back ....................... Will increase the speed.
Increase fuel (throttle) slowly.
When starting off or climbing a slope, slowly turning the Throttle Grip backward will increase the horsepower.

Return to original position Speed decreases.
Be agile while returning the Throttle Grip.

Return to original position

Speed decreases.
Be agile while returning the Throttle Grip.
Proper driving prolongs service life of your motorcycle.

- Do not exceed 60kpm during the run-in period of a new vehicle (1500 km).
- Avoid sudden increase of speed.
- Do not run the engine in high rpm without loading.

Apply both front and rear brakes

- After returning Throttle Grip to its Close position, apply both front and rear brakes at the same time.
- The ideal way for brake application is to activate the Front Brake Lever and Rear Brake Tread with a “slow start” followed by a subsequent “tightening”.

⚠️ WARNING

- Exceeding the maximum speed limit when driving in high speed will lead to increased engine load.

⚠️ WARNING

- One-side braking tends to cause unstable skidding of motorcycle, special caution must be taken.
- Match vehicle speed with respective gears; avoid shifting into a low gear or applying the engine brake while driving at high speeds.
Do not brake suddenly or turn abruptly

Braking suddenly or turning abruptly is the cause for a lateral skid and tumble, which is extremely dangerous.

Take extra cautions when riding in rainy days

- Road surfaces on rainy days are different from in fine days; braking distance will be longer, you should reduce your speed and take advanced actions for braking.
- On a down-slope, return Throttle Grip to its Closed position and apply intermittent braking.
Making a Stop

■ When approaching stop location
  - Light up Direction Lights in advance to alert vehicles behind you, then stop the vehicle slowly.
  - Return the Throttle Grip to origin, and apply both front and rear brakes in advance. The Rear Brake Light will now light up to alert other vehicles behind you.

■ Vehicle at full stop
Return Direction Light Switch; turn Main Switch to OFF.

CAUTION
- Switching off the Main Switch and removing the key while you are still driving is the root source of an accident. Only do so when you are ready to park.
Stand on the left side on a level ground and brace up the Main Stand
- Brace up the Main Stand on a level ground where traffic is not impeded.
- Standing on an uneven ground may cause a falling vehicle.
- Hold the handlebars with left hand and straighten the vehicle, pull the handle beneath the seat with right hand, tread down the Main Stand with right foot while pulling forcefully with the right hand.

For theft prevention, lock the steering stem and remove the key.
6. Checks before Riding

6-1. Checks before Riding
6-12. Periodical Checks
Checks before Riding

- Keep a good habit to perform checks before riding.
- For the sake of safety and prevention from failure and accident, advance checks are essential.
- Make sure to carry out not-so-difficult or non-troublesome checks before driving; in case of any anomaly, go to a national KYMCO dealer for service.

Oil Check and Replenishment

Stand the vehicle with the Main Stand. Remove oil level guide and wipe it clean, directly insert the scale (without screwing-in).
Check oil level. When the level approaches lower limit, replenish oil to a level between the upper and lower limits.

⚠️ CAUTION ⚠️
- Engine and exhaust pipe are at high temperature; be careful to avoid being burnt when checking oil level.
**Specified Oil**

Specification: SAE:15W/40#

API: SJ/CD grade or higher

**CAUTION**

- Oil level cannot be measured correctly when immediately after stopping the engine or with the vehicle on an uneven ground.
- If oil is checked or replaced immediately after stopping the engine, be especially careful not to get burnt.

**WARNING**

- There are many inferior oil products in the market, which are prone to cause misuse and failure of your vehicle.
- To ensure using genuine KYMCO oil products, please go to the dealer you purchased the vehicle from or respective service centers specified by KYMCO for oil replacement.

**Check/Replenish the Fuel**

When Fuel Indicator lights up, it indicates an effective remaining gasoline of approximately 1 litter in the tank.

**CAUTION**

- Stop the engine when replenishing fuel.
- Take off Main Switch Key and insert it into Fuel Tank Cap, turn the cap clockwise to open the cap.
- Replenish the fuel to a level 1 inch from the tank opening. Excessive level of fuel will result in an overflow.
**Handlebar Checks**

- Check for any play in up/down, front/rear and left/right directions.
- Check for over-tightness.
- Check for any collision on the handlebar.
- If any anomaly is sensed, go to a KYMCO dealer or service center for inspection and repair.
Check and Adjust Brakes

- A proper play must be provided for the brake lever (1); a normal play is 1-2 cm
- Play refers to the distance between the positions of the lever where is loose and where it is tightened.

**CAUTION**

Always check the play of front and rear brakes. When necessary, adjust the Brake Adjustment Nut for getting a proper play.
<Checking Front Brake Fluid>

1. Straighten the Handlebar and check the level of brake fluid in either front or rear reservoir is between the marks of upper and lower limits.
2. If level is near the Lower Mark, check the brake lining for a worn condition.
3. If the brake lining is not worn exceeding a specified limit, most likely there is a leakage of brake fluid; go to a dealer for repair.
4. Use recommended DOT-4 brake fluid.

<Checking Rear Brake adjustment>

CAUTION

- Make sure the recession of Adjustment Nut is aligned with the pin, to prevent any alteration of its position when the vehicle is running, which may lead to a danger.
• Is braking effective?
• Drive slowly to verify the effect of front and rear brakes.

■ Check and adjust Brake Light:
• Turn Main Switch to ON position.
• Respectively pull the Front and Rear Brake Levers; verify if Brake Light goes on.
• Check Brake Light for stain or fracture.
Check Winkers

- Turn Main Switch to ON position.
- Operate Winker Switch to verify if each Direction Light and indicator blink.
- Check Winker Casing for stain or fracture.
Check and adjust Clutch Cable

Play of Clutch Lever (1) must be 1-2cm; always check the play. If necessary, adjust nuts (2) and (3).

⚠️ CAUTION
- Too small play of clutch lever or it excessively tight is prone to result in a burnt clutch disc.

Check and adjust Clutch Cable

Check the play of Clutch Cable. If necessary, adjust the nuts (4) and (5).
Check Transmission Chain for a 1-2cm sag at the center of chain length between 2 gears.

Adjustment Method:
Loosen Rear Axle Nut and turn adjustment nuts on both sides, align the adjuster with the Side Mark and lock Rear Axle Nut.

1. To adjust chain tightness, loosen the Rear Axle Nut.
2. Turn adjustment nuts on both sides to a proper chain tightness, align the adjuster with the Side Mark and lock Rear Axle Nut.

CAUTION
- In this adjustment, the rear wheel tends to move backwards, therefore it requires to adjust the play of Rear Brake Lever as well.
Check Tires

Check for correct tire pressure.

Normal Tire Pressure:

<table>
<thead>
<tr>
<th></th>
<th>With 1 rider</th>
<th>With 2 rider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front Wheel</td>
<td>2.0kgf/cm²</td>
<td>2.0kgf/cm²</td>
</tr>
<tr>
<td>Rear Wheel</td>
<td>2.0kgf/cm²</td>
<td>2.25kgf/cm²</td>
</tr>
</tbody>
</table>

- Check tread pattern groves for metal chips or pebbles, remove them if any before riding.
- Replace the tire with a new one if it has fractures or the depth of tread pattern groove is less than the minimum limit due to wear.
- Check front and rear rims for any slackening or deformation which may affect driving safety. Go to a KYMCO dealer for service.
■ **Check Front/Rear Cushion**

Exert load onto Handlebar and Seat Pad and shake the vehicle up and down, check if shock absorbers act normally.

■ **Check if Headlight/Taillight goes on normally.**

Turn Main Switch to ON position. Operate Headlight Switch and check if Headlight goes on. Also check for any stain or fracture.

■ **Check Speedometer Index for normal action.**

■ **Check if horn is working.**

Turn MAIN SWITCH to ON position and press Horn Button.

■ **Check Back Mirror for proper angle.**

Sit yourself on Seat and check the rearview of the mirror; also check the mirror for any damage or stain.
Regular Checks

- For the sake of vehicle safety and driving comfort, please receive regular checks as scheduled.
- KYMCO dealers take care of after sales services as well as maintenance tasks.
- Refer to User Manual for timing of checks and check items.
- Perform regular checks even if your vehicle is left unused for a prolonged time.

Initial Check

Please perform the initial check of a new vehicle within 1 month from the date of purchase or at the mileage of 300km.
Change Oil

Oil Capacity:
Dismantle: 1 Liter
General Oil Change: 0.9 Liter

CAUTION
- Use only KYMCO 4-Cycle Motor Engine Oil.
- The following conditions expedite oil deterioration; you need to advance oil change:
  - Riding on pebbled roads often.
  - Riding short distances often.
  - Idling often.
  - Riding in the cold area.
- When replenishing oil, make sure the level is not exceeding Upper Mark in the Oil Level Window.
- Do not mix-use oils of different brand, class or low quality ones; they may cause engine faults.
- Change engine oil when engine is heated up; be careful not to get burnt.
<Oil Change Method>
1. Remove Oil Level Guide.
   Remove Drain Bolt, drain all the oil.
   - Warming up the engine before changing oil facilitates oil draining.
2. Clean Drain Bolt and re-install it tight.
3. Fill in new oil. Filling capacity is 0.9L.
   - Confirm by reaching the Upper Limit in the Oil Level Window.
4. After warming up the engine, stop engine and wait for 10-20 seconds, then verify oil level again.

⚠️ CAUTION
Precautions on Oil Change
• Excessive and insufficient oil amount can both affect engine performance.
  Excessive Oil —
  • Increased friction resistance of moving parts in the engine, which lowers output power and increases engine temperature, leading to early deterioration of engine oil.
  Insufficient Oil —
  • Reduced oil supply to moving parts in the engine, therefore results in worn parts, parts ablation, etc.
  • Do not mix oils of different brands, class or low quality ones; they may cause engine faults.
  • KYMCO Motor Oil contains additives (e.g., carbon cleaners) during the manufacturing process.
  • Arbitrarily mixing additives bought from the market may deteriorate the oil, affect lubricating properties and shorten the service life of engine.
Spark Plug Check and Adjustment

Dirty electrode or excessive gap can cause poor sparking.

< Cleaning Method>
- Use a Spark Plug Cleaning Device is the best way.
- If a Spark Plug Cleaning Device is not available, clean with a needle brush.

<Adjustment>
- Normal gap of spark plug is 0.6～0.7mm.
  (See the Figure on the right)

<Specified Spark Plug>
(N.G.K) CR8E
- Do not use a Spark Plug other than the specified one.
- Use a cool-type spark plug for high-speed or heavy load driving.

Spark Plug Gap: Indicates the gap between side electrode and core electrode.

⚠️ CAUTION
- Engine is at high temperature when stopped; be careful not to get burnt.
- Hand-tighten Spark Plug first, then tighten it with a plug spanner.
# 7. Periodical and Simplified Maintenance and Troubleshooting

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<td>7-7. Troubleshooting</td>
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</table>
Precautions:

If check results show that a cleaning, adjustment or replacement is required, carry it out according to instructions prescribed in the Periodical Check Record.

<table>
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<tr>
<th>CAUTION</th>
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<tr>
<td>Take safety precautions while performing maintenance</td>
</tr>
<tr>
<td>• Set up Main Stand of vehicle on a flat ground.</td>
</tr>
<tr>
<td>• Work with proper tools.</td>
</tr>
<tr>
<td>• Carry out preparation tasks while engine is stopped.</td>
</tr>
<tr>
<td>• Engine and exhaust muffler are at high temperature when Engine is stopped; be very careful to avoid being burnt.</td>
</tr>
</tbody>
</table>
Overview of Regular Maintenance for Hazard Reduction

Perform periodical check-up and maintenance as scheduled to ensure riding safety, vehicle performance and prolonged service life.

Periodical Check-up Items and Scheduling of the Exhaust Control System:

**I:** Inspection; clean, lubricate, replenish, remedy or replace as required. **A:** Adjustment. **C:** Cleaning. **R:** Replace. **T:** Tightening. **M:** Maintenance. **D:** Diagnosis

<table>
<thead>
<tr>
<th>Mileage</th>
<th>300</th>
<th>1000</th>
<th>2000</th>
<th>3000</th>
<th>4000</th>
<th>5000</th>
<th>6000</th>
<th>7000</th>
<th>8000</th>
<th>9000</th>
<th>10000</th>
<th>11000</th>
<th>12000</th>
<th>13000</th>
<th>14000</th>
<th>15000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Lubrication System:***
- Gear Oil: R

**Fuel Supply System:***
- Throttle Cable: I, I, I, I, I

**Air Supply System:***
- Air Cleaner Element: C, R, C, R, C, R
- Active Carbon Canister: I, I, I, I
- Filter wool in Transmission System: I, I, I, I
- PCV Evaporation control valve: I, I, I, I
- Control of relevant air duct: I, I, I, I
- Catalytic Converter: I, I, I, I
- Cam Chain: I, I, I, I
- Transmission Chain: I, I, I, M
- Drive Belt (none for this model): I, I, I, I
- Valve Gap: I, I, I, I

**Transmission System:***
- Spark Plug (4-stroke): I, R, I, I
- Ignition circuitry: I, I, I, I
- Throttle Valve (Body): M/I, M/I, M/I
- Fuel Injection Nozzle: D/M, D/M, D/M, C, D/M, D/M
- Idle Air Bypass Valve: D/M, D/M, D/M
- Engine Temperature Sensor: D, D, D, D, D
- Air Intake Pressure Sensor: D, D, D, D, D
- Reverse Sensor: D, D, D, D, D
- Ignition Coil: D, D, D, D, D
- Battery: D, D, D, D, D

**Engine Management System:***
- Major Chassis Bolts: T, T, T, T, T, T, T, T, T, T, T, T, T
- Fuel Injection Nozzle Cleaner: D, D, D, D, D
- Idle Air Control Valve: D, D, D, D, D
- Throttle Valve (Body): M/I, M/I, M/I
- Fuel Injection Nozzle: D, D, D, D, D
- PCV Evaporation control valve: I, I, I, I
- Control of relevant air duct: I, I, I, I
- Catalytic Converter: I, I, I, I
- Cam Chain: I, I, I, I
- Transmission Chain: I, I, I, M
- Drive Belt (none for this model): I, I, I, I
- Valve Gap: I, I, I, I
- Spark Plug (4-stroke): I, R, I, I
- Ignition circuitry: I, I, I, I
- Throttle Valve (Body): M/I, M/I, M/I
- Fuel Injection Nozzle: D/M, D/M, D/M, C, D/M, D/M
- Idle Air Bypass Valve: D/M, D/M, D/M
- Engine Temperature Sensor: D, D, D, D, D
- Air Intake Pressure Sensor: D, D, D, D, D
- Reverse Sensor: D, D, D, D, D
- Ignition Coil: D, D, D, D, D
- Battery: D, D, D, D, D

**Non-schedule Maintenance:***

<table>
<thead>
<tr>
<th>Item</th>
<th>Symptom and Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition System</td>
<td>Maintenance or inspection must be carried out if significant and continued ignition anomalies occur, engine overheats, or engine stops.</td>
</tr>
<tr>
<td>Eliminate Carbon Accumulation</td>
<td>If engine power output drops significantly between 10000-15000 km mileage, maintenance or inspection must be carried out for the system; replace it if necessary.</td>
</tr>
<tr>
<td>Transmission System</td>
<td>In the event of significant dropping of extreme speed around mileage of 5000 km, perform maintenance and inspection of the system; replace the system if necessary.</td>
</tr>
<tr>
<td>Piston</td>
<td>If excessive use occurs within the first 1000km, wear or seizure of piston, piston ring of cylinder may occur. Clean or re-bore the cylinder or replace piston with a new one.</td>
</tr>
<tr>
<td>Fuel Injection Nozzle</td>
<td>Clear out carbon accumulation or adhesion from Fuel Injection Nozzle every 1000km or when the vehicle is left unused for a long time.</td>
</tr>
</tbody>
</table>
Check Battery

- This vehicle uses a maintenance-free battery.
  - The battery requires no checking or replenishing.

Check battery voltage:
Battery voltage must exceed 12V when checked using a voltmeter. Remove battery and fully recharge it if voltage is too low.

**CAUTION**
- NEVER remove Electrolyte Cover of enclosed battery.
- Self-discharge occurs when leaving the vehicle unused for a long time, therefore battery power becomes weak. Remove battery from vehicle and charge it fully. Store the battery in a well ventilated cool place.
- Remove negative cable of battery if vehicle is to be left unused for a long time.
- Battery Indicator on Dashboard will light up if battery voltage gets excessively low. You need to remove and charge the battery or go to a KYMCO dealer for service.

Cleaning Battery Poles

- For cleaning battery poles, open the seat, remove 1 fixing screw of battery cover and lift the cover up.
- If battery pole is corroded, remove the battery for cleaning.
- After cleaning, apply a thin layer of grease or Vaseline on battery poles before installing battery.

**CAUTION**
- Keep fire away when removing/installing battery.
- Turn off Main Switch before removing battery; remove cable from Pole first, then Pole. Re-install Pole first, then pole.
- Make sure that any slackened nut of battery pole is properly tightened.
Fuse Replacement

<For Removal>
Lift off upper cover of fuse case, remove the fuse. Defective fuse contact tends to generate heat that leads to malfunctioning.

<For Assembling>
Insert Fuse into Fuse Holder and engage upper cover by pressing it down. Try to pull the wire after installing fuse; any slackening may result in heat generation that leads to malfunctioning; verify this with special care.

<CAUTION>
- Never use a fuse other than the specified rating; which was a main cause for a burnt wiring.
- Use genuine KYMCO parts when replacing Electrical Parts (lights, meters). When non-KYMCO parts are used, fuses are prone to be blown and battery loading will become unbalanced.
- In the event of a blown fuse, find out the cause before replacing it, otherwise it may burn again.
- Go to a KYMCO dealer or service center for check-up if the cause cannot be identified.
- By all means avoid using a power water jet for cleaning hood peripherals when washing the vehicle.
Cleaning Air Cleaner Foam

Excessive dust accumulation is the main reason for a horsepower drop.
1. Remove LH Rear Cover first, remove Air Cleaner Screw.
2. Remove Air Cleaner Element Cover and take out Air Cleaner Foam.
3. Remove Air Cleaner Foam, wash it, squeeze it dry and add a few drops of engine oil. (See Figure below)

<Installation Method>
Operate in reversed procedures as removal.

⚠️ CAUTION
- If Air Cleaner Foam is not inserted properly, dust may be sucked into cylinder and cause abrasion, drop of horsepower and shortened service life of engine.
- Never wet Air Cleaner Foam when washing the vehicle or difficult starting may occur.
User Precautions:

1. DO NOT remove battery cable when Main Switch is in ON state.

2. When the user or personnel of service center removes Exhaust Pipe, it is necessary to disconnect O2 Sensor first.

CAUTION

When riding or parking vehicle in humid environments (e.g., on a rainy day or washing vehicle), fog formation may occur temporarily inside the cover of Dashboard and lights due to inside/outside temperature differences; which is not a quality issue of them. However, if large amount of drops or accumulation of water appears inside Dashboard and light cover, please consult a KYMCO dealer for receiving service.
In case of fault of vehicle:

Go to a KYMCO Dealer for repair if any fault occurs when driving the vehicle. We recommend that genuine KYMCO parts must be used for any replacement.

In case of failure to start engine or engine stops during a riding, please check the following items first:

- Is there any more gasoline in the tanks?
  Check if Fuel Gauge Index is getting near the E area; replenish with #92 or #95 unleaded gasoline
- Are you starting the engine correctly?
- Others, whether there is a problematic part?
# 8. Environment Protection Mechanisms and Maintenance

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-1.</td>
<td>Understanding Exhaust Emission Control System</td>
</tr>
<tr>
<td>8-2.</td>
<td>Maintenance of Exhaust Emission Control System</td>
</tr>
<tr>
<td>8-3.</td>
<td>Understanding Evaporative Emission Control System</td>
</tr>
<tr>
<td>8-4.</td>
<td>Checking Evaporative Emission Control System</td>
</tr>
<tr>
<td>8-5.</td>
<td>Standard and Reference Table of Possible Causes of Pollution, Exhaust Concentrations, Fines, and Noise Levels.</td>
</tr>
</tbody>
</table>
Exhaust Emission Control System: Exhaust Emission Control System of this model adapts fuel injection system for effective pollution control of emission; pollution is further converted by Three-way Catalytic Converter for achieving super low exhaust contamination.

**WARNING**
Surface of exhaust pipe is very hot; park the vehicle at locations where pedestrian and children cannot access. Perform maintenance to keep optimal performance.

**CAUTION**
1. For ensuring normal function of Exhaust Emission Control System, carry out periodic inspection and maintenance for your vehicle.
2. For ensuring normal performance of Exhaust Emission Control System, never modify your vehicle arbitrarily, otherwise you may subject to a fine for pollution resulting from affected exhaust emission control.
3. Should you have any doubt, go to a KYMCO Dealer for check up.
Maintenance of Exhaust Emission Control System

Operation Method:
1. Refer to Page 7-5 for cleaning filter of Air Cleaner Element.
2. Engine Oil – In order to perfect engine lubrication and parts movement, replace engine oil at the first 300km and at every subsequent 1000km.
3. Gasoline – For not affecting performance of the ignition system or effective combustion, always replenish with #92 or #95 unleaded gasoline; Never use leaded gasoline. (Using leaded gasoline will result in aging and deterioration of catalytic converter in the exhaust pipe.)
4. Regarding standards of exhaust gas concentration tests of fuel injection models, please go to an inspection station for carrying out exhaust gas test and adjustment.

Exhaust Gas Test Standards:

<table>
<thead>
<tr>
<th></th>
<th>R.P.M</th>
<th>CO%</th>
<th>HC ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Statutory Value</td>
<td>1700±100</td>
<td>3.5 or less</td>
<td>1600 or less</td>
</tr>
<tr>
<td>Test value before catalyst</td>
<td>1700±100</td>
<td>0.4±2.0</td>
<td>1500 or less</td>
</tr>
</tbody>
</table>
Evaporative Emission Control System (E.E.C) is an evaporative fume exhaust device that collects fuel vapor from front fuel tank and throttle valve, for preventing the vapor from emitting to the atmosphere and causing air pollution.
Evaporative Emission Control System (E.E.C)

Periodical Check Method:
1. Check pipeline connections of E.E.C system for slackening or fracture; tighten or replace with new ones if any.
2. Activated Carbone Canister – Blow with mouth for testing air passage; replace with new one for poor or blocked air passage.
3. Oil Separator – Remove piping leading to activated carbon canister, blow with compressed air for good air passage; replace with new one if blocked.
4. Perform maintenance items as prescribed in List of Maintenance Items of Exhaust Emission Control System.

Irregular Checks:
Check piping components of EEC System for fracture or slackening in the event of any accident of the vehicle. Perform maintenance items as prescribed in Maintenance Items of Exhaust Emission Control System.

Suggestions:
1. Pollutant emission standards of this model comply with control standards of EURO 5 directive. Do not alter settings of adjustable parameters arbitrarily.
2. Do not remove or modify vacuum pipeline of EEC system.
3. In order to reduce pollutant emission, do not increase throttle repetitively when idling in neutral gear.
4. In addition to regular maintenance, should any anomaly occur (e.g., starting problem, black smoking, etc.), go to a contracted service center specified by KYMCO or maintenance.
5. Use #92 or higher grade unleaded gasoline only, for ensuring functionality of pollution prevention components.
Standard and Reference Table regarding Possible Causes of Pollution and Values of Exhaust Concentrations, Fines, and Noise Levels

Reference Table of possible causes for excessive emission concentration during idle speed of motorcycle/automobile

<table>
<thead>
<tr>
<th>CO</th>
<th>HC</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Normal</td>
<td>Excessive ratio of fuel-air mixture</td>
</tr>
</tbody>
</table>
| Normal | High | 1. Defective ignition system:  
|        |       |   - Incorrect timing of ignition  
|        |       |   - Spark plug carbon accumulation or improper gap  
|        |       |   - Defective ignition coil  
|        |       | 2. Worn vent valve  
|        |       | 3. Worn cylinder                                                               |
| Low  | High  | 1. Insufficient ratio of fuel-air mixture, causing firing failure  
|      |       | 2. Leaking vacuum:  
|      |       |   - Vacuum pipe connection  
|      |       |   - Intake manifold  
|      |       |   - connection gasket                                                         |
| High | High  | 1. Air Cleaner Element is clogged.  
|      |       | 2. Excessive mixture at idle.  
|      |       | 3. Defective O2 sensor causing excessive mixture ratio.  
|      |       | 4. Catalyst poisoning or defective, causing failure to convert pollutants.     |

Effective exhaust emission inspection standard and fine standard

<table>
<thead>
<tr>
<th>NO</th>
<th>Fine over pollution type</th>
<th>Fine Standard</th>
<th>Fine Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Either pollutant (CO or HC) exceeds emission standard.</td>
<td>Not exceeding 1.5 times</td>
<td>1,500</td>
</tr>
<tr>
<td></td>
<td>Exceeding 1.5 times</td>
<td></td>
<td>3,000</td>
</tr>
<tr>
<td>2</td>
<td>Both pollutants (CO and HC) exceed emission standard.</td>
<td>Both not exceeding 1.5 times</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>Both exceeding 1.5 times</td>
<td></td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>On exceeding 1.5 times</td>
<td></td>
<td>4,500</td>
</tr>
<tr>
<td></td>
<td>The other not exceeding 1.5 times</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Removal or modification of pollution prevention device. (Article 24 of Air Pollution Prevention Act)</td>
<td>Improved within 7 days after delivery of notice</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>Failure to improve within 7 days after delivery of notice</td>
<td></td>
<td>12,000</td>
</tr>
</tbody>
</table>

Vehicle Model | Noise level measured at the same spot dB(A) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPADE150Fi</td>
<td>No more than 94</td>
</tr>
</tbody>
</table>
9. Specifications

9-1. SPADE 150Fi Specifications
RT30HE
### RT30HE

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Type</td>
<td>RT30-1</td>
</tr>
<tr>
<td>Displacement</td>
<td>149.4 c.c.(mL)</td>
</tr>
<tr>
<td>Cylinder diameter × Stroke</td>
<td>Φ62mm × 49.5mm</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>10:1</td>
</tr>
<tr>
<td>Gear Shifting Method</td>
<td>5-Gear International Shifting</td>
</tr>
<tr>
<td>Clutch</td>
<td>Wetted Multiple Disc Type</td>
</tr>
<tr>
<td>Ignition Method</td>
<td>ECU Controlled all-transistor Ignition</td>
</tr>
<tr>
<td>Starting Method</td>
<td>Electrical Motor</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>6.0L</td>
</tr>
<tr>
<td>Total Oil Content</td>
<td>1000c.c.(1.0L)</td>
</tr>
<tr>
<td>Total Gear Oil Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Length</td>
<td>1800mm</td>
</tr>
<tr>
<td>Total Width</td>
<td>750mm</td>
</tr>
<tr>
<td>Total Height</td>
<td>920mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle Base</td>
<td>1230mm</td>
</tr>
<tr>
<td>Dry Weight (Net)</td>
<td>123kg</td>
</tr>
<tr>
<td>Tires</td>
<td>Front Wheel 120/80-12</td>
</tr>
<tr>
<td></td>
<td>Rear Wheel 130/70-12</td>
</tr>
<tr>
<td>Fuel type</td>
<td></td>
</tr>
<tr>
<td>Battery Capacity</td>
<td>12V8Ah (Model: 9B-BS)</td>
</tr>
<tr>
<td>Spark Plug</td>
<td>NGK CR8E</td>
</tr>
</tbody>
</table>

Above specifications depend on actual vehicle models
KYMCO's products sold in Taiwan are all designed, manufactured, and quality controlled in Taiwan.