

READ THIS MANUAL CAREFULLY!
It contains important safety information.

EV150B

VINTAGE Owner's Manual

Please read this manual carefully as it contains important safety information which should be understood before operation the vehicle.

General Notice

Please make sure you fully read this guide in order to maximize your enjoyment of your VINTAGE and do so in a safe and responsible manner.

Always use the safety belt when driving.

Ensure that all the luggage rack are securely fastened.

Never put your hands in the engine compartment.

Never exceed the maximum weight limit.

Never de-limit the vehicle's engine where it is not legal to do so.

If you have any queries whatsoever concerning the operation or maintenance of your VINTAGE please do not hesitate to contact your local distributor who will be pleased to assist.

CONTENTS

1 PREFACE 3
2 SAFETY 4
3 FEATURES AND CONTROLS 6
4 PRE-DRIVE INSPECTION 21
5 OPERATION 25
6 VEHICLE BRAKE-IN PERIOD 28
7 MAINTENANCE 29
8 ELECTRICAL DIAGRAM 39
9 SPECIFICATION 40
10 TROUBLESHOOTING 43
11 WARRANTY 47
10 SERVICE 49

PREFACE

We would like to thank you for choosing a VINTAGE and wish you an enjoyable trouble-free driving experience.

Judging form your choice, you probably have nostalgic feeling in the vintage vehicle of the 1960's and 1970's, by which we are inspired. This road-worthy and street-legal leisure vehicle is intended to give both driver and passenger a fun experience. As with any vehicle, however, you should take time to familiarize yourself with your VINTAGE and its performance characteristics.

This Owner's Manual contains a host of useful information. Please take time to read this manual before you drive your new VINTAGE for maximum safety and operation pleasure. Always drive within your own capabilities as a driver and your level of experience with your VINTAGE. Ensure that anyone else driving your VINTAGE does the same. If you are unsure the safe operation of your VINTAGE, please contact your local dealer for guidance.

The VINTAGE has gained its E.U. Type Approval, category L7e-B2 heavy quadricycle. It does not provide the same degree of safety as a car, such as airbags or side impact reinforcing. For this reason, many people may wish not to drive this vehicle (as like a motorcycle) on the road due to the inherent risks. Therefore if you do not feel totally at ease while driving the VINTAGE, we strongly advise that you do not use it or take training to increase your confidence.

In order to comply with the L7e-B2 classification in Europe, the engine output power has been limited electronically, to less than 15KW for road use. Under no circumstances should the engine or components be modified to allow the engine to exceed this factory set power limit for on road use. Doing so is illegal and could be dangerous. Whilst the power restriction helps limit self induced mishaps, it does not protect the driver and/or passenger from others on the road. For this reason one should take the same precautions as one would if using a motorcycle.

This Owner's Manual should be considered a permanent part of this vehicle. It should stay with the vehicle when sold to provide the next owner with important safety, operating and maintenance information.

- Strictly follow the law pertaining to the minimum age limit for driving this vehicle. Anyone driving this vehicle must have a valid driving license. Follow the standards expected by the regulating authorities in your area.

- Even if you are an experienced driver, each and every vehicle is different. Make sure you familiarize yourself with how the vehicle handles at slow speeds on quiet roads, or parking areas initially. Fully understand how the brakes, steering and gearing respond before using the vehicle at higher speeds. If you feel the vehicle is not working properly at any stage, or if you feel that you require further assistance please, read the manual. If this does not provide the solution, contact your local dealer.

- Overloading or improper tire pressure can cause loss of control leading to serious injure. Reduce speed and allow greater distance for braking when carrying cargo.

- Wearing the safety belt when driving your VINTAGE reduces the risk of severe injury in the case of rollover, loss of control. Safety belt is a necessity in riding. Never forget to wear safety belts in any circumstances.

- Never operate your VINTAGE without proper instructions. The operator must know exactly how to drive the vehicle in all circumstances to reduce the risk of an accident. Every operator must read and understand all warnings and instruction labels in the security manual.

- After consuming alcohol or drugs, please do not motivate your VINTAGE. The alcohol and drugs could confuse your feeling, let you make the wrong decision. Never consuming alcohol or drugs when driving.

- Never operate your VINTAGE at excessive speed in case of losing control. Always operate the vehicle at appropriate speed according to the operating conditions.

- Your VINTAGE is designed to provide safe operation when used as directed. Modifications may negatively impact vehicle stability. Failure of critical machine components may result from operation with any modifications, especially those that increase speed or power. Your VINTAGE may become less stable at speeds higher than those for which it is designed. Loss of control may occur at higher speeds.

- Always use your VINTAGE in a controlled manner. Never skid it during turns, particularly on paved roads. Skidding indicates the vehicle is not in full control because contact with the road has been lost. Avoid sharp and sudden turns which can cause loss of control especially in wet and slippery conditions.

- Always adjust your driving to suit the changing conditions, such as in wet

weather, gravel, road construction or ice and snow. We recommend reducing the speed of the VINTAGE significantly in these conditions or if you are unsure about driving in adverse conditions, not to use it at all.

- Occupants should keep their whole body inside the vehicle cabin when in motion.

- When refueling, always observe the following precautions; ignition switch off and engine stopped. Refuel outdoors, do not overfill petrol tank and spill fuel over the hot components of the engine and do not smoke.

- This vehicle is designed for outdoor use only. There is serious risk involved with starting the engine in a confined space due to the toxicity of odorless exhaust gases. Always start this vehicle outside or in a ventilated area.

- Operating this vehicle in water or extremely wet conditions is not recommended. Braking may be compromised with stopping distances increased.

- The vehicle has side mirrors and interior rear-view mirror, take care that there are no objects or people behind the vehicle when reversing.

- Cargo placed on the rear rack needs to be secured properly. The weight of both cargo and passengers impacts vehicle operation. Never go beyond the maximum load capacity.

- Always keep both hands on the steering wheel and foot ready to operate the foot pedals. This will ensure rapid response to road situations.

- Be alert at all times and never drive this vehicle beyond your comfort zone or skill ability.

- When leaving the vehicle, make sure the hand brake is fully engaged, the engine left in gear and on sloping roads the front wheels are turned towards the curb.

Keys



1. **Ignition key**
2. **Fuel tank key**
3. **Storage box key**
4. **Battery main switch key**

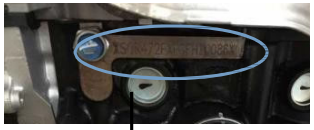
VIN number & Engine number





VIN number



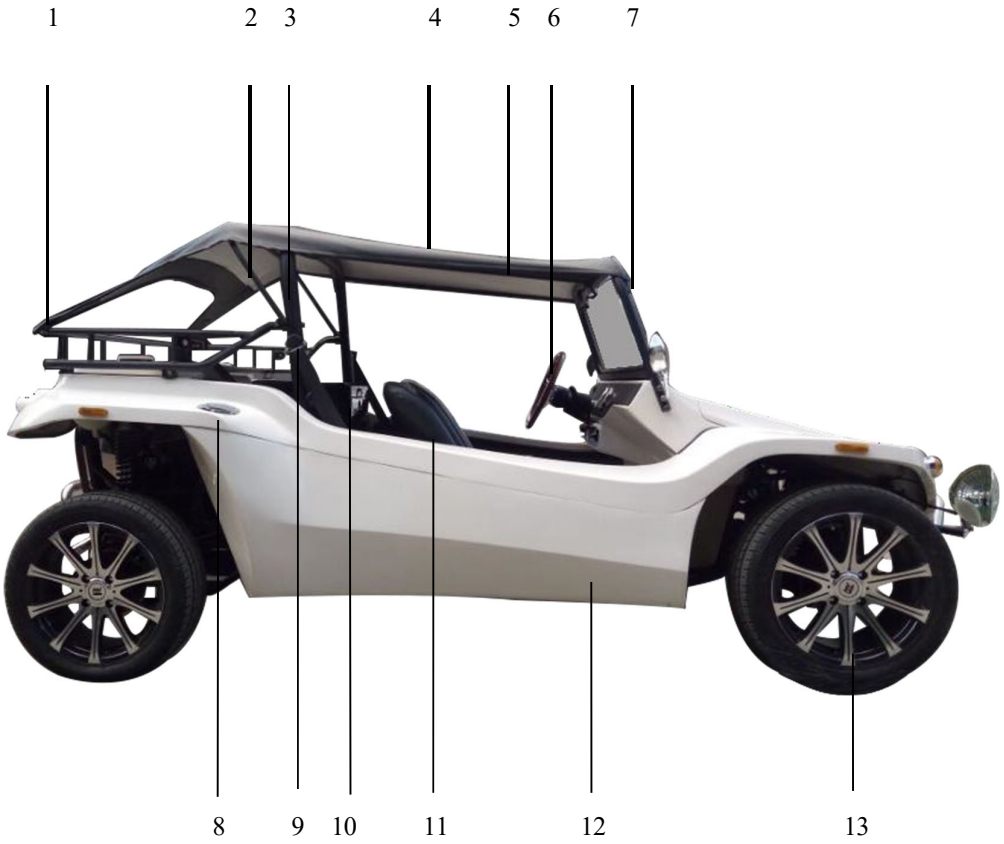


Engine number



1. **Side mirror**
2. **Windscreen wiper***
3. **Windscreen***
4. **Upper head lamp***
5. **Turning lamp**
6. **Front swing arm**
7. **Hood**
8. **Front bumper**
9. **Logo**
10. **Front mesh plate**
11. **Water spray nozzle***
12. **Head lamp**

*** Not included in EEC certification**



1. Soft roof rear fixed point
2. Soft roof support bar*
3. Rear support bar
4. Soft roof*
5. Middle support bar
6. Steering wheel
7. Soft roof front fixed point
8. Fuel tank cap
9. Rear safety belt fixed point
10. Storage box
11. Front seat
12. Side plate
13. Aluminum wheel

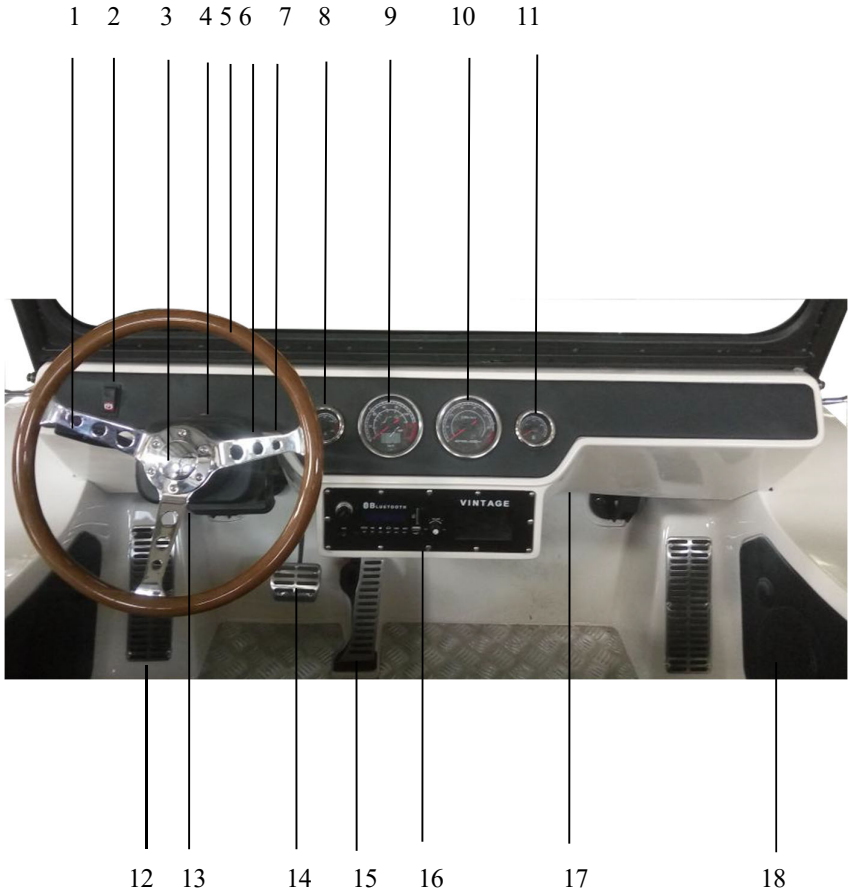
* Not included in EEC certification



1. Engine cover*
2. Rear rack
3. Interior mirror*
4. Combination tail lamp
5. Rear reflector
6. Rear swing arm/suspension
7. Logo
8. Rear mesh plate
9. Rear bumper
10. Exhaust pipe
11. Registration plate lamp
12. Registration plate
13. Speed limit plate

* Not included in EEC certification

Dashboard and control device



1. Lamps switch/indicator/high beam/low beam
2. Parking brake switch
3. Horn switch
4. Hazard warning lamp switch
5. Steering wheel
6. Wiper/washer switch
7. Ignition switch
8. Engine temperature gauge
9. Speedometer
10. Tachometer
11. Fuel gauge
12. Footboard
13. Hood release switch
14. Brake pedal
15. Gas pedal
16. Audio console
17. Battery main switch
18. Speaker



4



ON

OFF

ON

ACC

Start

Lock

5



1



OFF

ON

2



ON



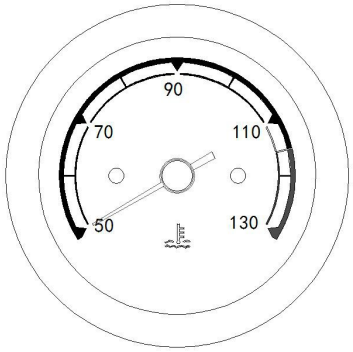
OFF

3

1. Hood release switch
Pull this button, the hood lock is released
2. Parking brake
3. Battery main switch
4. Hazard warning lamp
5. Ignition switch

Instrument cluster

Engine coolant temperature gauge



Pointer to the left - engine cold

Pointer in the middle - normal operating temperature

Pointer to the right - engine heavily loaded

The pointer may move up to the red line when engine temperature is too high.

Caution: If the pointer comes to the red area, the coolant temperature is too high. You should:

Pull off the road, turn off the engine and allow to cool.

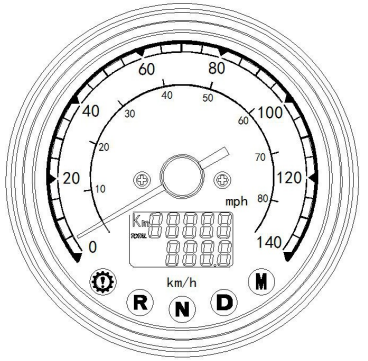
Check radiator and water pipe for obstructions.

Check coolant level. If the coolant level is too low, add coolant after the engine has cooled to the touch.

If necessary, have the cause of fault remedied at an authorized dealer.

Note: To prevent excessive temperature, the coolant passages must not be restricted by coverings.

Speedometer



The speedometer indicates the vehicle's driving speed and the gear the vehicle is engaged.

Odometer

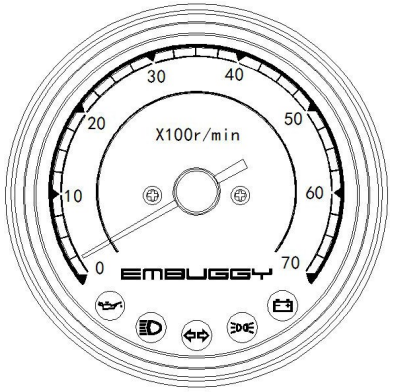
Trip odometer

To reset it to zero, turn off the engine.

AMT malfunction

If this warning light turns into red. The transmission has responded to a malfunction with a fault code displaying on the Odometer. Have the fault remedied at the nearest authorized dealer.

Tachometer



The tachometer shows the engine speed in revolutions per minute(rpm).

The beginning of the red marks at the right end of the scale indicates the maximum permissible engine rpm.

A speed limiter prevents over-rpm during acceleration. Before reaching this area, the next higher gear should be selected.

Shift to the next lower gear when the engine rpm drops below 1500rpm.



Engine oil pressure indicator

The oil pressure is controlled as required and should be at least 3.5 bar at an engine speed of 5000rpm.

The engine oil pressure varies depending on the engine speed, engine load and engine temperature.

If oil pressure drops abruptly and the warning light turns into red when the engine is running on or when driving:

Stop immediately in a suitable place.

Switch off the engine.

Check whether there is an obvious oil leak on or under the car.

Add engine oil if necessary.

Caution: Risk of engine damage

Do not continue driving if there is an obvious oil leak.

Do not continue driving if the warning lights come on even though oil level is correct.

Have the fault remedied at the nearest authorized the dealer.



High beam indicator light

Lights when high beam or headlight flasher is switched on.

The indicator light goes out when the high beams are switched off.



Turn signal indicator light

Flashes in synchronism with the turn signals.

If the frequency of the display becomes noticeably faster, check the operation of the turn signals.



Position lamps

The front and rear vehicle lighting is switched on. You can used the parking lamps to signal the position of the vehicle when it is parked.



Battery

If the battery voltage drops abruptly, this warning light will turn into red. If the warning is displayed while the engine is running or while driving:

Stop the car in a safe place and stop the engine.

Possible causes:

- defect in the battery charging system
- broken drive belt

Warning: Risk of engine damage with resultant

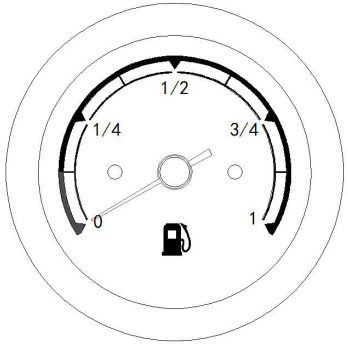
loss of control and accident, leading to serious personal injury or death.

A broken drive belt means there is no power assistant to the steering (more effort is required to steer) and coolant pump function will stop.

Do not continue driving.

Have the fault remedied at the nearest authorized dealer.

Fuel gauge



When the ignition is on the fuel level is displayed.

If the vehicle's inclination changes (e.g. Going up or downhill), minor deviations in the indication may occur.

Note: If a small quantity of fuel is added to a nearly empty fuel tank, the fuel gauge cannot measure the added fuel accurately. The "remaining range" readout will also be incorrect.

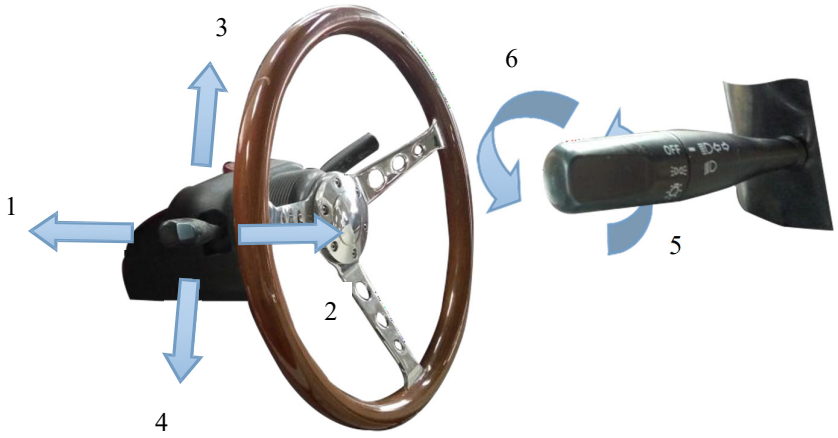
Warning: When the pointer points the red line, fill up at the next opportunity.

Caution: To prevent damage to the emission control system and engine:

Never drive the tank completely out of fuel.

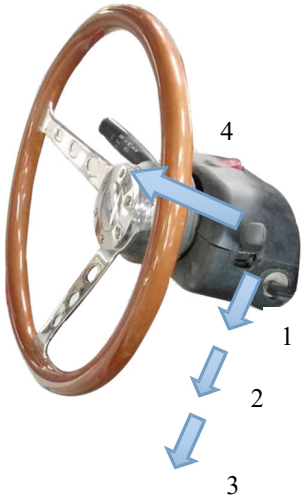
Avoid high cornering speeds after the indicator comes to the red part.

Lamps and switch



1. High beams - blue indicator lamp
2. Headlamp flasher - blue indicator lamp
3. Left turning signal indicator - green indicator lamps
4. Right turning signal indicator - green indicator lamps
5. Position lamp - blue indicator lamp
6. Headlamp / High beam / Low beam - blue indicator lamp

Wiper / washer



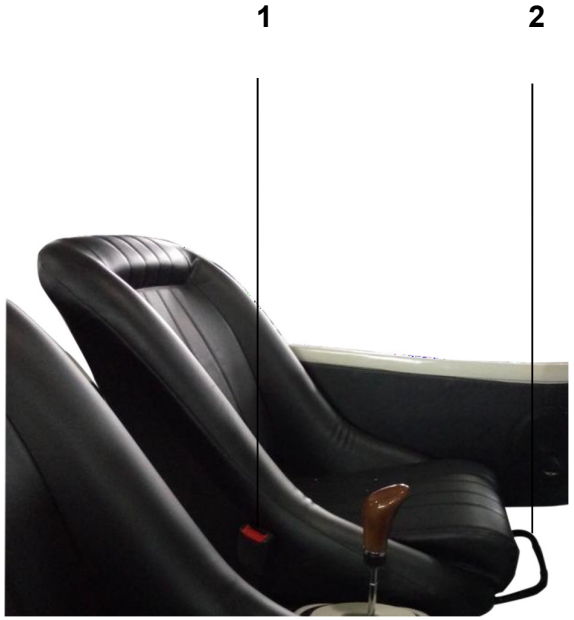
1. Neutral
2. Normal wiper speed
3. Fast wiper speed
4. Water spray

Audio console



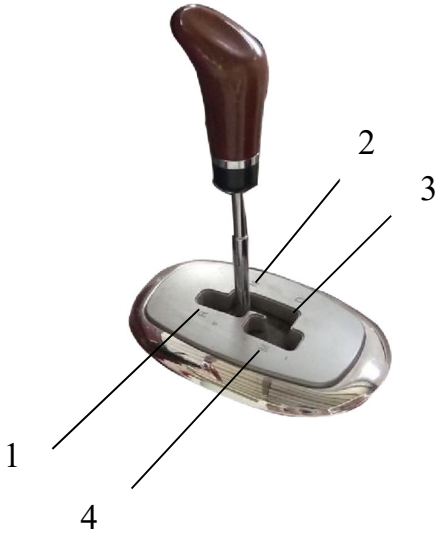
1. **Cigarette lighter**
2. **Display screen**
3. **SD port**
4. **Main switch & Volume switch**
5. **Storage box**
6. **AUX**
7. **Mode - Bluetooth / FM / SD/ USB**
8. **Play / Pause / FM auto search**
9. **Stop**
10. **Repeat**
11. **Previous**
12. **Next**
13. **USB port**

Seat



1. Safety belt buckle
2. Seat adjustment handle

Gear shift



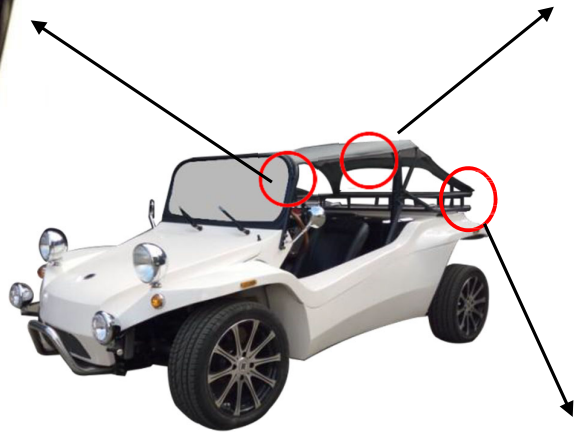
1. R - Reverse
2. N - Neutral
3. D - Drive
4. M - Manual

Soft roof
Install and uninstall





Step 1





Step 3



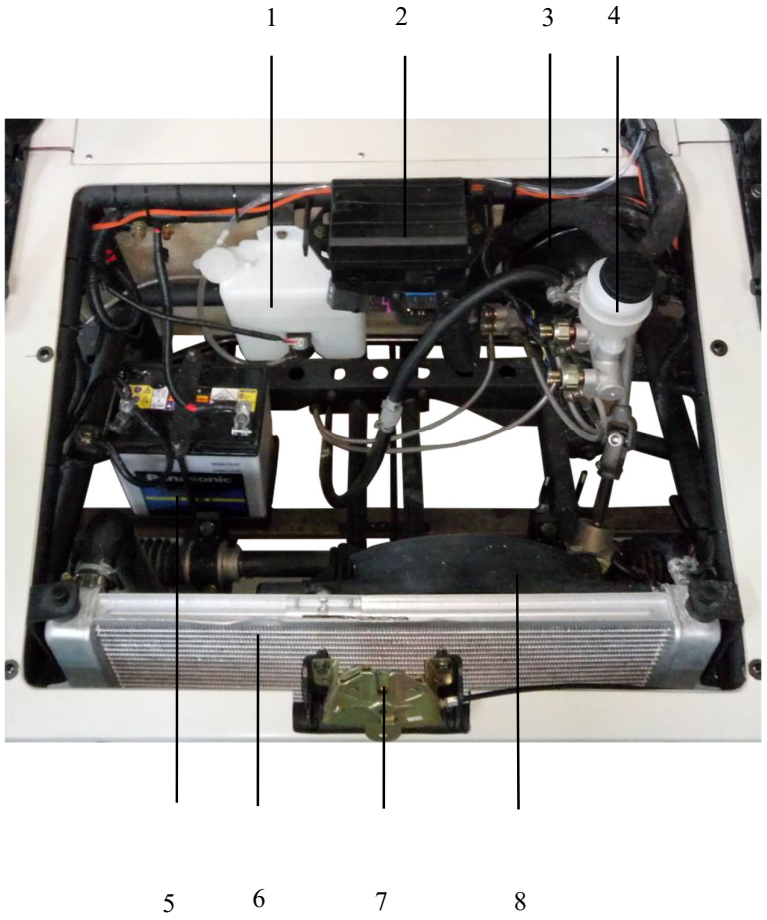
Step 2





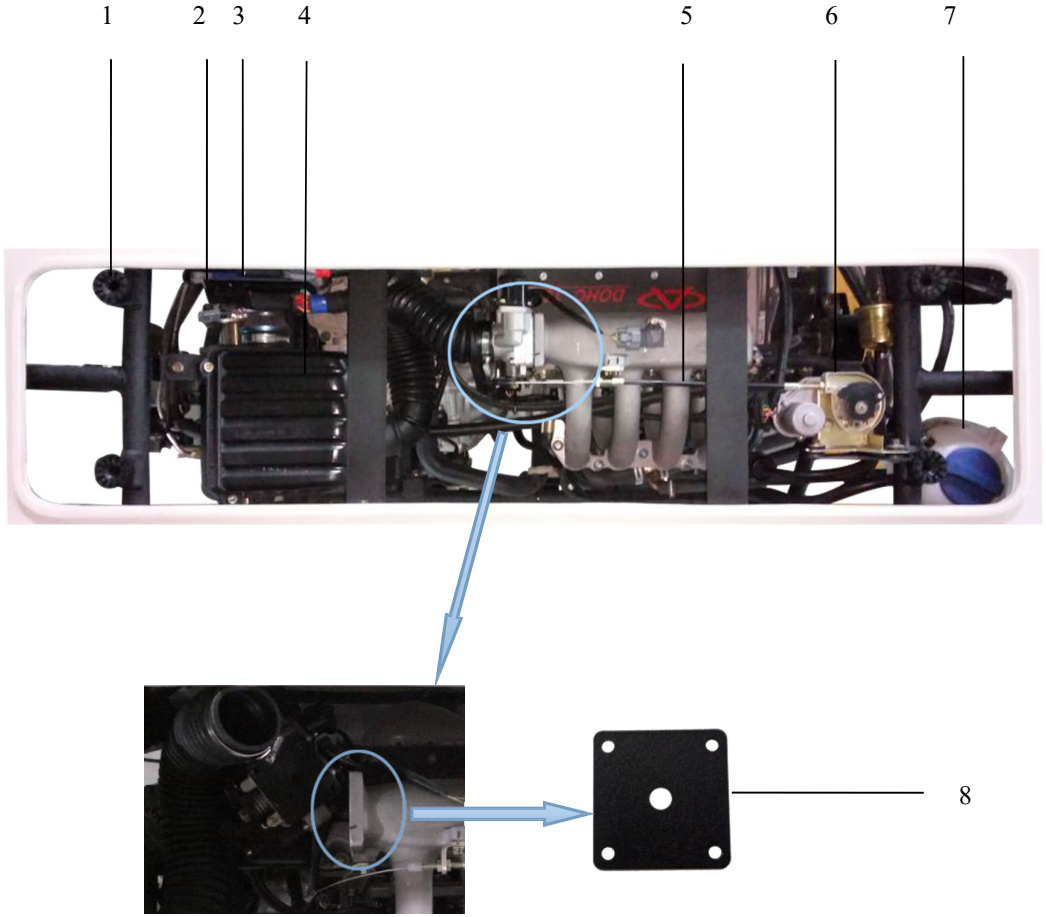
The soft roof is designed very easy to install and uninstall.
Follow the above steps and it will takes you only several minutes to finish the procedure.

Front hood



1. Water reservoir
2. Fuse box
3. Vacuum booster
4. Brake fluid reservoir
5. Battery
6. Radiator
7. Hood lock
8. Fan

Engine compartment



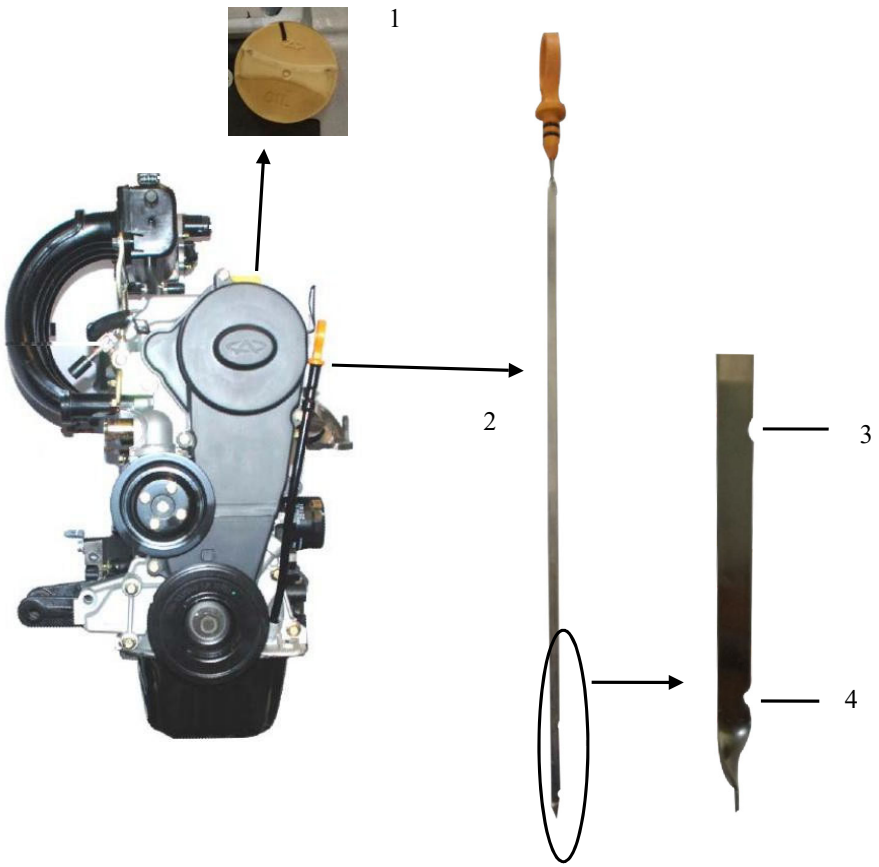
1. Engine cover installing hole
2. TCU (Transmission control unit)
3. ECU (Engine control unit)
4. Air filler
5. Throttle cable
6. Throttle motor
7. Coolant bottle
8. Engine output power limit plate

Pre-drive inspection

Before using your VINTAGE it is always a good idea to run through a routine inspection in order to make sure it is in roadworthy condition. If the vehicle has experienced a severe impact of any kind, you should take it to a dealer for an inspection to assess whether damage has occurred.

Always make sure that you are familiar with all controls, including but not limited to the instrument panel, mirrors, pedals and steering. We recommend carrying out the following checks before using your VINTAGE. If you are unsure about the operation of any aspect of the vehicle, ask your local dealer for advice.

Engine oil level



1. Oil filler cap
2. Dipstick
3. Maximum level line
4. Minimum level line

Oil of the correct specification and quantity should be used at all times for the engine to operate property and efficiently. Check the oil quantity by inspecting the dipstick when the vehicle is on level ground.The oil level at no time should fall below the minimum level line, otherwise damage may occur to the engine. Add oil as necessary through the top valve cover cap, until a satisfactory level is achieved. Check for any sign of leaks or over consumption.

Engine coolant level

To avoid overheating and engine damage, the radiator should have the correct type and quantify of coolant bottle, which should have 2/3 volume of liquid when the engine is cold. Should the level be below this amount, refill with the specified coolant. Never fill this bottle as this bottle serves to receive excess coolant from the radiator when the engine heats up. In hot climates, checking coolant level is very important as liquid loss can occur due to evaporation. The position of the Coolant bottle can be found on page 20.

Fuel level

Always make sure that you have enough fuel to complete the journey you intend to make. When you refuel the fuel tank observe the precautions outlined in the Safety Information section. After refueling lock the fuel filler cap and always make sure the cap is fully secured. The fuel gauge indicates the fuel quantity. We advise that you refuel as soon as possible once observing the pointer comes to the red part.

Tires

Tires provide the only points of contact with the road surface, so proper upkeep is essential. Always check tire pressure, look for any signs of excessive wear or presence of undesirable intrusions and check the tightness of wheel lug nuts. Tires in bad condition can make the vehicle handle poorly with the possibility of loss of control.

Throttle

The accelerator pedal must operate freely and accurately. Be sure it moves smoothly when pressed and returns to its original positions when released. Do not operate the vehicle if pedal or engine throttle linkage does not return freely to the idle position. Adjust or contact your dealer for advise if in double the throttle operation.

Brakes

The vehicle uses a hydraulic disc brake system. Press down on the brake pedal several times, checking for proper brake pedal free movement. Make sure that there are no brake fluid leaks and verify that the fluid level is correct. If the braking system does not operate in this fashion it may be that the liquid level is low in the system due to leakage. Adjust or contact your dealer for advice if in doubt about the brake operation.

Steering

Check that the wheel turn properly as you turn the steering wheel from left to right. There should be no free play in the steering wheel and it should operate smoothly. Contact your dealer if in double about the steering operation.

Exhaust system

The exhaust system needs to be free of any combustibles, such as grass or misplaced baggage. Only when the exhaust pipe is cool, remove any offending items to prevent a fire hazard.

Underside

Check beneath the vehicle for any signs of damage from stones and other items ensuring

nothing interferes with the proper and safe use of your vehicle.

Light

Test all the lighting functions, high/low beam headlamps, indicators, brake lights, combination tail light and hazard warning lamps. Never use your vehicle on the road if any of these lights are not functioning properly. Contact your dealer if you need any replacement components.

Fasteners

Scan and periodically check all fasteners throughout the vehicle. Replace any fasteners which appear defective. Never use your vehicle if any fastening parts are unsecured.

Battery

Check that the battery is well charged. Make sure that the battery terminals are free of corrosion. If the battery is not charging this could be a sign that the battery is at the end of its useful life.

Windscreen washing system

Check the windscreen washer fluid level in the bottle and fill as necessary with washer fluid. Verify the windscreen wiper is functional and the wiper blade properly clears the windscreen.

Safety belt

Check the two anchorage points safety harness is properly secured to the frame.

Horn

Check the function of the horn by depressing the center of the steering wheel.

Seat adjustment

When adjusting the driver's seat make sure the engine is switch off. It is imperative that the driver has proper control of the vehicle and good forward visibility.

To adjust the distance from the pedals, pull up the adjustment handle located under the seat front and slide until it clicks to the required position.

Safety belts

Safety belts are one of the most important features of any vehicle.

Assume a comfortable sitting position. The shoulder belt should always rest on your upper body. The shoulder belt should never be worn behind your back or under your arm. Grasp belt and pull the belt in a continuous slow motion across your chest and lap. Insert belt tongue into buckle on inboard side of the seat. Push down until it securely locks with an audible click. Pull the belt to check. Pull shoulder section to make sure belt fits snugly across the pelvis. Belts should fit snugly across the pelvis and chest. Make sure there is no slack in the belt.

To release your belt: press red button in the belt buckle, hold end of the belt and guide belt back into the inertia reel.

Parking brake

Switch on the parking brake when the parking brake has stopped.

Switch off the parking brake button to release the parking break.

Rear view mirror

Before driving, always make sure that the side mirrors and inner rear view mirror are fully adjusted so that you have a good clear view of the activity behind you. The mirror can be rotated.

Shifting gears

Press the footbrake and engage the required selector lever position by moving the selector lever from one gear to another.

Selector lever position

R N D M + -

R Reverse

Select only when the vehicle is stationary.

N Neutral

Select only when stopping for an extended period.

Only select the desired position for driving off (D, M or R) when the engine is idling and the brake pedal is depressed.

D Drive - automatic shift program

This position is designed for driving under all normal operating conditions. The gears are shifted automatically according to the accelerator position and speed.

When the pedal is pressed abruptly or slowly, the gear-changing points are shifted towards higher or lower engine-speed ranges respectively.

The accelerator position, driving speed, engine speed, longitudinal and lateral acceleration and the road profile all have an influence on the gear-changing characteristic.

Unwanted upward shifts, e.g. Before bends, are prevented by swiftly releasing the accelerator pedal.

M Manual selection mode

When you move the selector lever from the D

position to the left into the M range, the performance-oriented shift programs of the automatic transmission are engaged. Steptronic enters the manual selection mode and this mode allows you to execute upshifts manually by tapping the lever toward +, while downshifs are selected by tapping in the - direction. Your current gear selection will be indicated on the tachometer.

Whenever you want to use automatic again, just move the selector lever toward the right to position D.

Under normal operating conditions, fuel consumption is lowest when driving in position D.

Footbrake

To operate the foot brake, apply pressure to the brake pedal.

The stopping force depends on your foot pressure, so the more pressure you apply to the pedal the sooner you will slow down.

The brake system uses hydraulic fluid to transmit pressure from the foot pedal to the disc brakes, and the fluid temperature can change the braking characteristics.

In wet and icy conditions care must be taken that you don't apply too much sudden force and put the vehicle into a skidding situation, especially while cornering. Keeping your distance behind vehicles is always advisable, as it allows extra time to slow down in a controlled manner.

Caution: The brake booster is applied in this vehicle, which assists braking only when the engine in running. When the vehicle is moving while the engine is not running, or if the brake booster is defective, more pressure on the brake pedal is required to bring the vehicle to stop. Avoid pressing the brake pedal when the engine is off, or the brake system maybe be damaged. When the engine is off while driving, press the brake pedal with more pressure and stop the vehicle according to the road condition and contact the nearest dealer.

To start engine

Put the selector lever to position N. Press the brake pedal. Make sure the transmission is in neutral. Insert the ignition key and turn it in a clockwise direction until the "ON" condition is activated.

Turn the key one step more and the starter motor will switch on. Hold it in this position for no more than 4seconds and the engine should start.

If the engine fails to start, repeat the process, after waiting 10 seconds minimum. Once the engine is running wait a few seconds before engaging the gears and releasing the hand brake.

Note: Do not actuate the starter for too short a time, but do not actuate it for more than approx. 20 seconds.

Release the ignition key immediately when the engine starts.

Caution: To prevent the vehicle from starting of on its own, always move the selector lever to position N and engine the parking brake before leaving your vehicle with the engine running.

Do not leave the vehicle unattended with the engine running. An unattended vehicle with a running engine represents a safety hazard.

To stop engine

Bring the engine to idle.
Brake and stop the vehicle.
Put the transmission in neutral.
Apply the parking brake. Turn the key counterclockwise to the “LOCK” position. The engine will cease operating.
Caution: You should never remove the ignition key when the vehicle is in motion, as the steering lock could engage.
When you leave the vehicle, always remove the ignition key and engage the steering lock.
Always engage the parking brake when parking on downhill roads. Engaging a gear may not sufficiently secure the vehicle against rolling.

Break-in period

The break-in period for your new VINTAGE is the first 25 hours of operation, or the time it takes to use the first two tanks full of gasoline. No single action on your part is as important as a proper break-in period. Careful treatment of a new engine and drive components will results in more efficient performance and longer life for these components. Perform the following procedures carefully.

Engine and drivetrain break-in

1. Fill the fuel tank with gasoline. Always exercise extreme caution whenever handling gasoline.
2. Check the oil level. Add the recommended oil as needed to maintain the oil level in the safe operating range.
3. Complete the New Operator Driving Procedures outlined on page 25.
4. Avoid aggressive use of the brakes.
5. Vary throttle positions. Do not operate at sustained idle.
6. Perform regular checks on fluid level, controls and areas outlined on the daily pre-ride inspection checklist.
7. Pull only light loads.
8. After the break-in period, change both the oil and the filter at 7500Km operation

Brake System Break-in

Apply only moderate braking force for the first 500 miles. Aggressive or overly forceful braking when the brake system is new could damage brake pads and rotors.

MAINTENANCE

Careful periodic maintenance will help keep your VINTAGE in the safest, most reliable condition. Inspection, adjustment and lubrication of important components are explained in the periodic maintenance chart. Inspect, clean, lubricate, adjust and replace parts as necessary. When inspection reveals the need for replacement parts, use genuine parts available from your dealers. Service and adjustments are important for proper vehicle operation. If you're not familiar with safe service and adjustment procedures, have a qualified dealer perform these operations. Maintenance intervals in the following chart are based upon average vehicle speed of approximately ten (10) miles per hour. Vehicle subjected to serviced more frequently.

Perform all service at whichever maintenance interval is reached first.

Item	Maintenance Interval (which ever comes first)			Remarks
	Hours	Calendar	Km	
Steering	-	Daily	-	Check each day before driving the vehicle. Make adjustments as needed.
Tires	-	Daily	-	
Brake Fluid Level	-	Daily	-	
Brake System	-	Daily	-	
Brake Pedal Travel	-	Daily	-	
Engine Oil Level	-	Daily	-	
Engine Oil Change	100	6M	7500	Perform a break-in oil change at one month/10hrs
Air Filter, Main Element	-	Weekly	-	Inspect; replace as needed.
Brake Pad Wear	50	Monthly	3000	Inspect periodically
Front Suspension	50	6M	3000	Inspect
Rear Suspension	50	6M	3000	Inspect
Spark Plug	100	12M	10000	Inspect; replace as needed
Front Wheel Bearings	100	12M	-	Inspect; replace as needed
Toe Adjustment	-			Inspect periodically; adjust when parts are replaced
Headlight Aim	-			Adjust as needed
Throttle Free Play	25	Monthly	1500	Check for proper operation
Main Gearcase Oil	25	Monthly	-	Inspect level; change yearly

Note: if you are unable to professionally carryout the above tasks, have an authorized dealer perform these service.

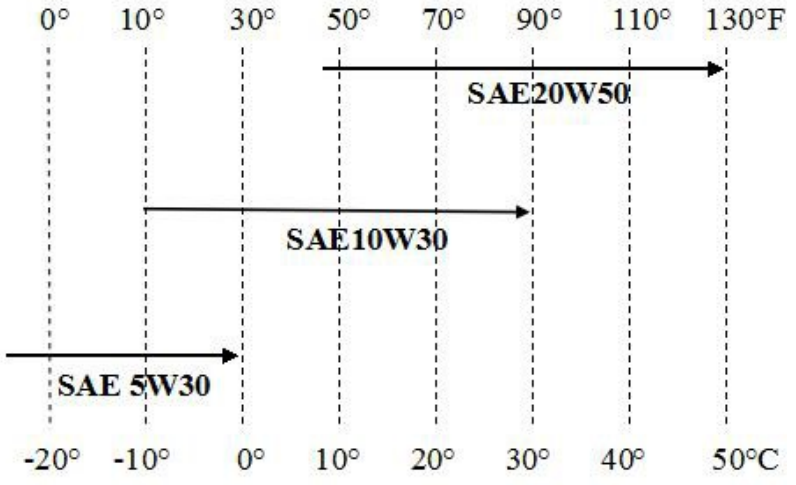
Note: If you operate this vehicle in severe use environments we advise that you shorten the maintenance interval.

Engine oil

Always check and change the engine oil at the intervals outlined in the Periodic Maintenance Chart. Oil may need to be changed more frequently if the recommended oil is not used.

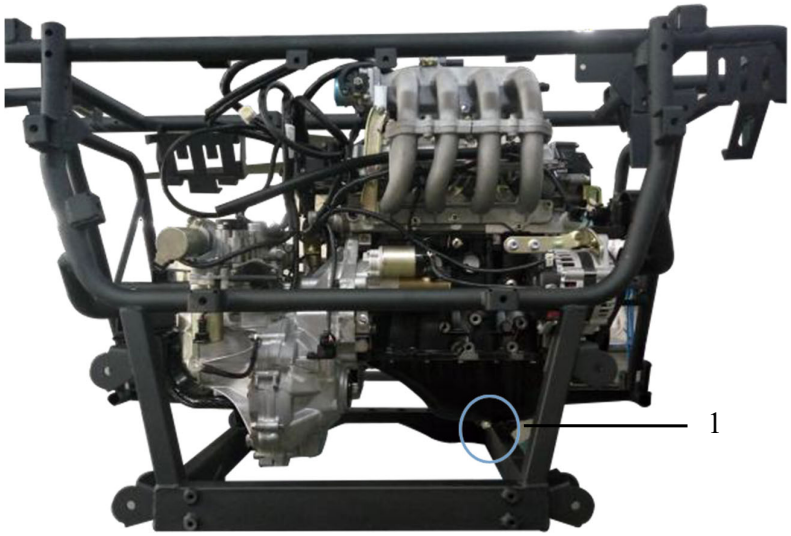
Oil recommendations

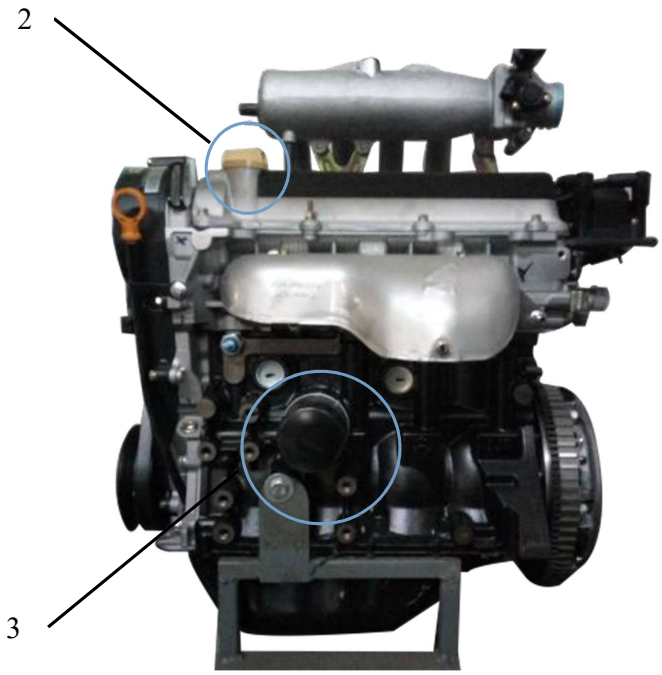
Notice: Mixing brands or using a non-recommended oil may cause serious engine damage. Always use the recommended oil. Never substitute or mix oil brand.



API Service SE, SF, SG type or higher

Engine oil and filter change





1. Engine drain plug
2. Oil filler cap
3. Oil filter

Always change the oil and filter at the intervals outlined in the Periodic Maintenance Chart. Always change the oil filter whenever changing the engine oil. The engine drain plug is located on the bottom of the crankcase.

1. Position the vehicle on the level surface. Set the parking brake.
2. Start the engine. Allow it to idle for two to three minutes. Stop the engine.
3. Clean the area around the drain plug.

Caution: Hot oil can cause burns to skin. Do not allow hot oil to contact skin.

4. Place a drain pan under the engine crankcase.
5. Remove the drain screw. Allow the oil to drain completely.

Note: The sealing surface on the drain plug and crankcase should be clean and free of burrs or scratches.

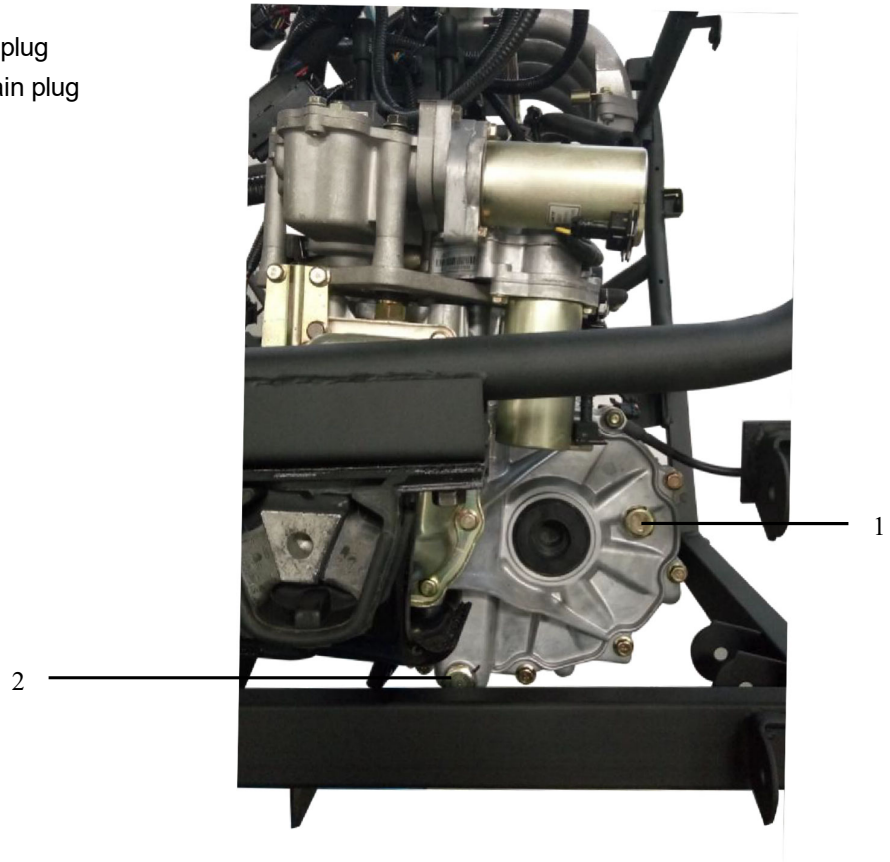
6. Using a cap-style oil filter wrench, turn the oil filter cartridge to remove it.
7. Using a clean dry cloth, clean the filter sealing surface on the crankcase.
8. Lubricate the O-ring on the new filter with a film of fresh. engine oil. Check to make sure the O-ring is in good condition.
9. Install the new oil filter cartridge with an oil filter wrench, and then tighten it to the specific torque with a torque wrench. Oil filter cartridge tightening torque: 17N • m (17m • kgf, 12ft • ldf).
10. Reinstall the sealing washer on the drain plug.
11. Reinstall the drain plug. Add the recommended engine oil.
12. Place the transmission in neutral. Apply the brakes.
13. Start the engine. Allow it to idle for one to two minutes.
14. Stop the engine, inspect to leaks.
15. Re-check the oil level on the dipstick and add oil as necessary to bring the level to the upper mark on the dipstick.
16. Dispose of used filter and oil properly.

Main gearcase transmission fluid check

1. It is not possible to check the transmission oil levels without removing the oil and measuring the quantity.
2. To check the oil levels follow the direction for “Fluid Change”.

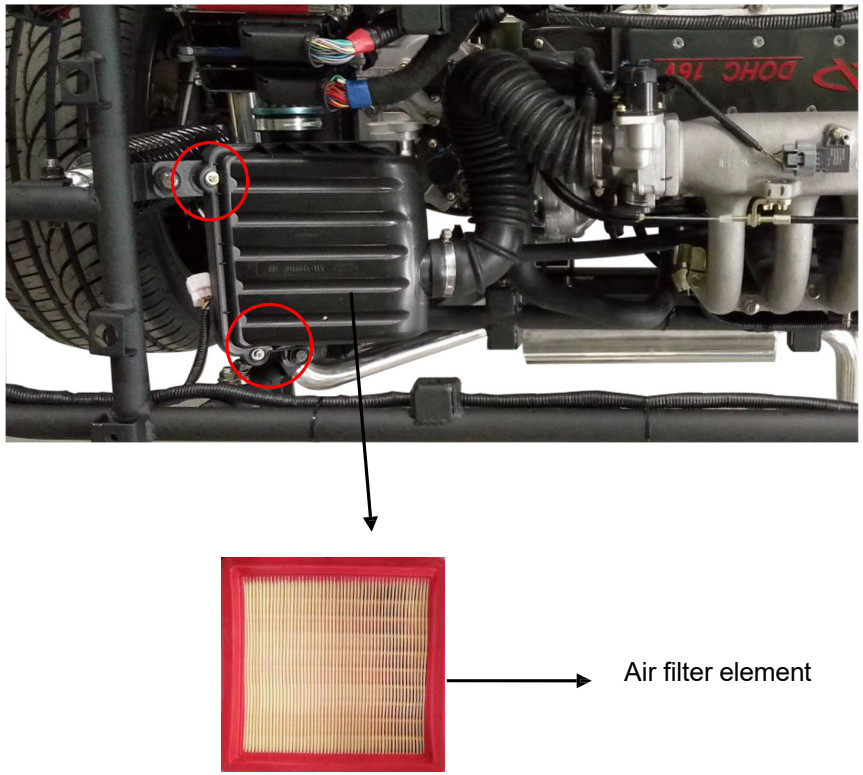
Fluid change

1. Gear oil fill plug
2. Gear oil drain plug



1. Remove the oil fill plug.
2. Place a drain pan under the drain plug.
3. Remove the drain plug. Allow the fluid to drain completely.
4. Clean the drain plug.
5. Reinstall the drain plug with a new O-ring.
6. Add the recommended quantity of oil through the fill port.
7. Reinstall the fill plug.
8. Check for leaks.
9. Discard used fluid properly.

Air filter



Always change the air filter at the interval outlined in the Periodic Maintenance.

1. To open the air filter for inspection unscrew the two screws and remove the outside cover.
2. Remove the air filter element.
3. Inspect the air filter element. We strongly suggest you change out the air filter element should you find it heavily contaminated with dust and dirt.
4. Clean away any oil or sediment from the air filter housing.
5. Reinstall the air filter element making sure it is well seated in the housing.
6. Reinstall the outside cover making sure the two screws are well seated.

Notice: Never operate the vehicle with the filter element removed. Dirt will enter the engine, causing rapid wear and severe damage to the engine.

Cooling system

1. Place the vehicle on a level surface.
2. Check the coolant level in the coolant reservoir when the engine is cold as the coolant level will vary with engine temperature.
3. Add coolant if necessary.
4. When the engine is cold, open the coolant bottle, add the coolant, start the engine to idle. Add some more coolant when the radiator fan begins to operate. Wait until the fan stops and the coolant circulates regularly, close coolant bottle.
5. Find the position of the coolant bottle on page 20.

Windscreen washer system

1. The windscreen washer fluid bottle is mounted under the hood on the passenger side. Periodically check the level of fluid in the bottle.
2. Open the bottle and recharge the bottle.

Throttle system

Failure to check or maintain proper operation of the throttle system can result in an accident and lead to serious injury or death if the throttle pedal sticks during operation.
Never start or operate your VINTAGE if it has a sticking or improperly operating throttle pedal. Immediately contact your dealer for service if throttle problems arise.
Always check the pedal for free movement and return before starting the engine and occasionally during operation.

Brakes

Always check brake pedal travel and the brake fluid reservoir level before each use of the vehicle.
When applied, the brake pedal should feel firm. Any sponginess would indicate a possible fluid leak or low brake fluid level, which must be corrected before driving. If you discover any irregularities in brake system operation, including excessive pedal travel contact your dealer for proper diagnosis and repairs.
Operating the vehicle with a spongy brake pedal can result in loss of braking, which could cause an accident resulting in severe injury or death. Never operate the vehicle with a spongy-feeling brake pedal.

Brake inspection

1. Check the brake system for fluid leaks.
2. Check the brake pedal for excessive travel or spongy feel.
3. Check the friction pads for wear, damage and looseness.
4. Inspect the brake pad wear surface for excessive wear.
5. Change pads when worn to 1.00 mm.

Brake fluid

Inspect the level of the brake fluid before each operation. The reservoir is located under the hood behind the brake pedal. If
the fluid level appears low add DOT 3 hydraulic fluid as follows:
1. Position the vehicle on the level surface.
2. Set the parking brake.
3. View the brake fluid level from the side and

check that the level is above the minimum mark as indicated on the fluid reservoir.

4. To add fluid, carefully unscrew the reservoir cap. Pour additional brake fluid to the maximum mark as indicated.

5. Reinstall the cap.

6. Check the operation of the brake mechanism to verify that it functions correctly and the brakes can be operated in the normal manner.

Steering wheel inspection

1. Position the vehicle on level ground.

2. Make sure the tires are inflated to the correct pressure.

3. Position and front wheels in the straight ahead position.

4. When viewed from the front, observe that the front wheels have a slight symmetrical ‘toe in’ appearance. The difference between the front and the rear, center to center tire dimension should be 5mm.

5. Turn the steering wheel and feel the “free play”. If there is more than 20mm, adjustment may be necessary.

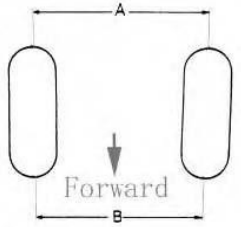
6. Any steering system adjustments should be made by an authorized dealer.

Front Wheel Alignment

1. Put the vehicle on level ground.

2. The “toe-in” of the front wheels should be 0.98 inches. To check for alignment, measure distance A and B between the centerline (CL) of the wheels. The proper toe-in dimension A should be 0.98 inches greater than dimension B.

3. To adjust the alignments, loose the lock nuts on both sides of Front Tie Rods. To make Dimension B smaller, turn the rod to the left. Turn the rod to the right to make Dimension B larger. After adjusted to desired length, tighten the lock nut against the rod end. Recheck the dimensions for proper alignment.



Tires

Operating your vehicle with worn tires will increase the possibility of skidding, loss of control and an accident, which could result in serious injury or death. Always replace tires when the tread depth measures 3.00mm or less. Improper tire inflation or the use of nonstandard size or type of tires may adversely affect vehicle handling, which could result in vehicle damage or personal injury. Always maintain proper tire pressure. When replacing tires, always use original equipment size and type.

Wheel removal

1. Position the vehicle on a level surface.

2. Place the transmission in neutral. Set the parking brake. Stop the engine.

3. Loosen the wheel nuts slightly.

4. Elevate the side of the vehicle by placing a suitable stand under the frame.

5. Remove the wheel nuts. Remove the wheel.

Vehicle immersion

Notice: If your vehicle becomes immersed in water, major engine damage can result if the machine is not thoroughly inspected. Take the vehicle to your dealer before starting the engine. If it's impossible to take your vehicle to a dealer before starting it, follow the steps outlined below.

1. Move the vehicle to dry land.
2. Check the air filter. If water is present, dry the air filter and replace the filter with a new filter. Thoroughly dry the air filter.
3. Remove the spark plugs.
4. Turn the engine over several times.
5. Dry the spark plugs and reinstall them, or install new plugs.
6. Attempt to start the engine. If necessary, repeat the drying procedure.
7. Take the vehicle to your dealer for service as soon as possible whether you succeed in starting it or not.

Battery

This machine is equipped with a sealed-type battery. Therefor it is not necessary to check the electrolyte or add distilled water in the battery. If the battery seems to have discharged, consult your dealer.

Caution: Do not try to remove the sealing caps of the battery cells. The battery may be damaged.

A special battery charger (constant voltage/ampere or constant voltage) is required for recharging a sealed type battery. Using a conventional battery charger may shorten the battery life.

Fuse replacement

Warning: Do not use an improper fuse, because an improper fuse can cause damage to the electrical system which could lead to a fire. Always use a fuse of the specified rating. Never use a material in place of the proper fuse.

Caution:

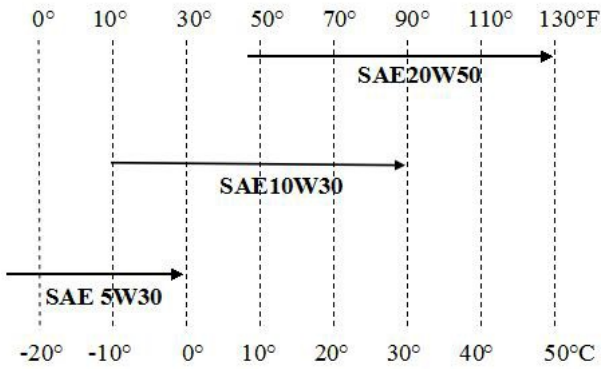
To prevent accidental short-circuiting, turn off the main switch when checking or replacing a fuse.

ELECTRICAL DIAGRAM

SPECIFICATION

MODEL	EV150A	
Dimensions		
Overall Length	3310mm	
Overall Width	1830mm	
Overall Height	1560mm	
Wheelbase	2400mm	
Minimum Ground Clearance	300mm	
Maximum Speed	90km/h	
Total Vehicle Mass	610kg	
Maximum Load Bearing	295kg	
Mechanical Features		
Drive motor model	TZ190X15D	
Drive motor power (rated / peak)	15/30KW	
Drive motor rpm (rated / peak)	3870/7100rpm	
Drive motor torque (peak / rated)	120/37N.m	
Drive motor rated voltage	144V	

Motor controller	KTZ14X40G	
Battery pack	144V/150Ah	
Starting	Electric	
Ignition	CDI	
Transmission	AT	
Brakes, Front / Rear	Hydraulic Disk	
Suspension, Front / Rear	Independent Dual A-Arm	
Final Drive System	Shaft	
Steering	Rack and pinion EPS	
Exhaust System	EU IV 3 - way Catalytic Converter	
Other		
Battery	12V 36Ah	
Fuel Capacity	60L	
Fuel Type	Unleaded gasoline 93 octane minimum	
Tires, Front / Rear	235/45 R17, 235/45 R17	
Tire Pressure, Front / Rear	10 psi, 15psi	
Shock Absorbers	Coil spring / N_2damper	

MODEL	VINTAGE
Fluids	
Engine oil	 API Service SE, SF, SG type or higher
	3.5L
Coolant	**Q/3200LPSH15 or Equivalent**
Transmission oil	**SAE 85W/90 GL-4 2.0L**
Windscreen washer fluid	**Universal 1.8L**

＊EU Countries ≤15KW

Engine doesn’t turn over

Possible cause	Solution
Low battery voltage	Recharge the battery to 12VDC
Loose battery connections	Check all connection and tighten
Loose solenoid connection	Check all connection and tighten
Loose electronic control box connections	Inspect, clean, reinstall connectors
Brake lamp switch is broken	Press the brake pedal to test the brake lamp is on or off. Inspect the fuse. If the fuse is fine, see your contact.，
Gear shift is not in neutral.	Shift the gear to neutral.

Engine turns over, fails to start

Possible cause	solution
Out of fuel	Refuel
Clogged fuel filter	See your VINTAGE dealer
Water is present in fuel	Drain the fuel system and refuel
Old or non-recommended fuel	Replace with fresh recommended fuel
Fouled or defective spark plugs	Inspect plugs and replace if necessary
No spark to spark plug	Inspect plugs and replace if necessary
Water or fuel in crankcase	Immediately see your VINTAGE dealer
Low battery voltage	Recharge the battery to 12 VDC
Mechanical failure	See your dealer

Engine backfire

Possible cause	Solution
Weak spark from spark plug	Inspect, clean and/or replace spark plugs
Incorrect spark plug gap or heat range	Set gap to specs or replace plugs
Old or non-recommended fuel	Replace with fresh recommended fuel
Incorrectly installed spark plug wires	See your dealer
Incorrect ignition timing	See your dealer
Mechanical failure	See your dealer
Loose ignition connections	Check all connection and tighten
Water present in fuel	Replace with fresh recommended fuel

Engine pings or knocks

Possible cause	Solution
Poor quality or low octane fuel	Replace with recommended fuel
Incorrect ignition timing	See your dealer
Incorrect spark plug gap or heat range	Set gap to specs or replace plugs

Engine runs irregularly, stalls or misfires

Possible cause	Solution
Fouled or defective spark plugs	Inspect, clean and/or replace spark plugs
Warn or defective spark plug wires	See your dealer
Incorrect spark plug gap or heat range	Set gap to specs or replace plugs

Loose ignition connection	Check all connection and tighten
Water present in fuel	Replace with new fuel
Low battery voltage	Recharge battery to 12V DC
Kinked or plugged fuel tank vent line	Inspect the replace
Incorrect fuel	Replace with recommended fuel
Clogged air filter	Inspect and clean or replace
Other mechanical failure	See your dealer
Possible lean fuel cause	**solution**
Low or contaminate fuel	Add or change fuel, clean the fuel
Low octane fuel	Replace with recommended fuel
Clogged fuel filter	See your VINTAGE dealer
Possible rich fuel cause	**solution**
Fuel is very high octane	Replace with lower octane fuel

Engine stops or loses power

Possible cause	**solution**
Out of fuel	refuel
Kinked or plugged	Inspect and replace
Water is present in fuel	Replace with new fuel
Fouled or defective spark plugs	Inspect, clean and/or replace spark plug
Worn or defective spark plug gap or heat range	See your dealer
Incorrect spark plug gap or heat range	Set gap to specs or replace plug
Loose ignition connection	Check all connections and tighten

Low battery voltage	Recharge the battery to 12V DC
Incorrect fuel	Replace with fresh recommended fuel
Clogged air filter	Inspect and clean or replace
Other mechanical failure	See your dealer
Overheated engine	Clean radiator screen and core, clean engine exterior, see your dealer

AMT malfunction

Trouble	**solution**
A trouble code display on the odometer.	See your dealer
Fail to shift to gear D or shift from gear D to gear N. The gear shifts from gear D to gear N automatically during driving.	See your dealer

Others

Trouble	**Cause & Solution**
Hard steering	**EPS malfunction, see you dealer**
Hard pressing brake pedal	**Power brake booster or vacuum pipe is broken**

WARRANTY

- The costs of any deliveries shall be borne by The Distributor.
- A pre-requirement for the warranty is that the Goods are operated and serviced in accordance with the Supplier's instructions.
- If during the warranty period, faults occur in the delivered Goods, the Distributor should consider if it meets the warranty conditions, then the Distributor should inform the Supplier in writing of his proposal.
- The Distributor is obliged immediately in writing to inform the Supplier about all occurring faults.

Constructors Conditions of Guarantee

The Constructors Guarantee is conditional with the strict adherence to the conditions stated below. It is necessary that all recommended servicing is carried out utilizing original EVA Motors parts.

Service Guarantee

The Distributor must carry out all prescribed maintenance and servicing.

The Supplier offers a warranty for a Vintage buggy with ***Guaranteed Parts*.**

Parts are covered in accordance with the conditions of guarantee, as specified below.

Guaranteed Parts

5 years warranty on the Vintage body and frame (anti-fading & anti-rust)

2 years warranty on the engine, AMT

Provide that the buggy is not registered within the first 3 months of arrival, the warranty goes from 24 months to 21 months and so on can deduce the rest

EVA MOTORS is willing to give all the necessary parts to the distributor in order to maintain all the VINTAGE buggy sold around the world

Not Guaranteed

- Any defects which are not attributable to the materials or workmanship of the manufacturer.
- Use of the road buggies on off public roads
- Change of parts as a result of an accident and collision
- Replacement of parts due to mis-use or abuse of vehicle.

- Replacement of parts due to being submersed in water.
- Any work should the buggy have been repaired by others than the distributors or its dealers.
- Change of parts with non conforming tools have been used on the vehicle.
- Any work should the buggy have non conforming parts fitted.
- Any work where the buggy is known to have been used with weight in excess of the recommended limit of 300kgs, or any lower legal limits as per the jurisdiction the vehicle has been operated in.
- Any work where the buggy has been used in a race, competition, or any illegal use.
- Any work where the buggy has been modified without permission, e.g. delimiting power or increasing the engine performance.
- Any work which is the result of poor storage, e.g. humidity, sun, cold, dirt.
- Any work where non conforming parts have been used.

Consumables Parts, Wear and Tear items and Liquids (not guaranteed)

- Consumables: Spark Plugs, oil filters, air filters, brake pads, brake discs, brake calipers, gear box, clutch discs, battery, lights, bulbs, fuses, shock absorbers, flexible tubes, hoses, seals.
- Wear and tear Items: Seats, suspension system, windscreen, mirrors, tyres, exhaust pipe, catalytic, starter, electrical relays, nuts and bolts.
- Liquids: Lubrication, motor oil, gear box oil, grease, acids, coolant and brake liquids.

SERVICE

First service - 500Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes:

Second service - 2500Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes:

First service - 7500Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes:

First service - 12500Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes:

First service - 20000Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes:

First service - 27500Km Km

Date:

Owner:

VIN number:

Engine number:

Dealer:

Notes: