

Thank you for purchasing your outboard motor **HANGKAI**.

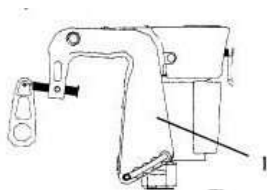
Thank you for your trust in our company and products.

- HANGKAI outboard motors are powerful, economical and safe, manufactured using modern technologies and processing methods.
- Please read this manual carefully before operating your outboard motor. A good knowledge of the instructions will help you operate, maintain and store the motor correctly. This will help your outboard motor perform at its best in different conditions.
- HANGKAI continuously seeks ways to improve the quality of its products and therefore, although this manual contains the most current product information available at the time, minor discrepancies between your motor and this manual are allowed.
- If there are any questions regarding this manual, please consult your local HANGKAI dealers.
- The illustrations and explanations in this Manual do not constitute the basis for any legal claims against our company.

Location of the motor serial number.

The outboard motor registration number is located on a label located on the left side of the engine mounting bracket or on the top of the bracket hinge.

Write down the registration number of your outboard motor. This will make it easier to order spare parts from your HANGKAI dealer, and will help identify the motor in the event that your outboard motor is stolen.



1. Motor serial number location The motor serial number is as follows:

SN

The engine registration number is also stamped on the aluminum crankcase.



AND looks next way:

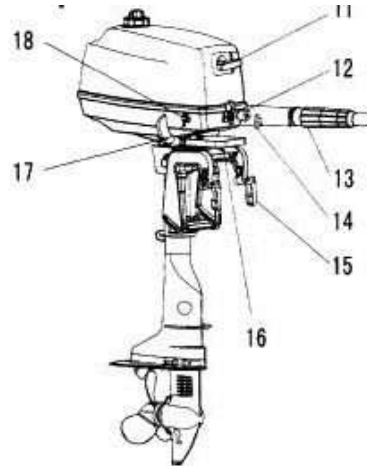
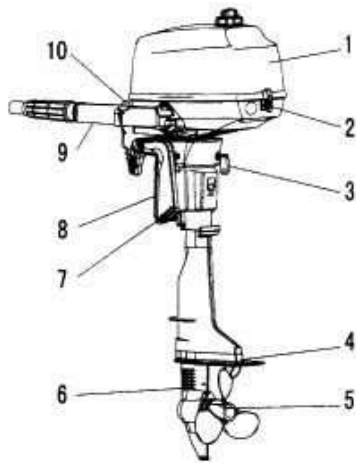
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Basic elements and general information

Essential elements.



1. Upper fairing
2. Upper fairing lock
3. Steering slip adjustment screw
4. Anti-cavitation plate
5. Screw
6. Water cooling window
7. Axle of the folding mechanism
8. Mounting bracket
9. Tiller handle
10. Stop button / emergency stop check
11. Recoil starter handle
12. Starting enrichment

13. Throttle control (gas)
14. Throttle control slip adjuster
15. Transom mounting screw
16. Emergency cable
17. Driving mode switch
18. Fuel tap

General information.

Specifications.

Options

<i>Parameter</i>	<i>Meaning</i>	<i>Parameter</i>	<i>Meaning</i>
engine's type	2-stroke	Transom (L)	560mm
Working volume	74.6cm ³	Transom (S)	433mm
Bore/Stroke	47mm/43mm	Fuel tank volume	1.5 l
main gear	2.08 (27/13)	Recommended fuel	Unleaded gasoline 92+
Length	597mm	Recommended oil	2-stroke semi-synthetic
Width	292mm	Recommended oil ed.	SAE80W90
Height (L)	1095mm	Oil volume in gearbox	100 cm ³
Height (S)	968mm	Spark plug type	BPR6HS-10
Weight (L)	17kg	Spark plug gap	0.9-1.0mm
Weight (S)	16kg		

Characteristics

<i>Characteristic</i>	<i>Meaning</i>	<i>Characteristic</i>	<i>Meaning</i>	
Maximum power	2.9kW/5000 rpm	Idle speed	1300±50 rpm	
Maximum revolutions torque	4200 - 5300 rpm	Moment puffs	Candle	27.0Nm
			Screw	20.0Nm

Recommendations for refueling.

Fuel: Unleaded gasoline 90-93, if unavailable, gasoline 95 can be used once.

If you experience a knocking noise when you open the throttle suddenly, change gas station or use higher octane gasoline. If you do use leaded gasoline, check valves, spark plugs and all fuel-related parts every 100 hours of operation.



WARNING!

Do not smoke while refueling the engine, and stay away from areas where open flames and sparks may occur.

Stop the engine before refueling.

Refuel in a well-ventilated area. Do not fill additional fuel tanks on board.

Do not allow fuel to overflow into the tank.

Try not to spill gasoline; if gasoline does spill, wipe it up immediately. Close the gas cap securely, but not too tightly.

If gasoline accidentally gets into your mouth, nose, eyes, or if you inhale a lot of gasoline vapor, seek medical help immediately.

If gasoline gets on your skin, wipe it off immediately and wash the area with soap and water. Change clothes if gasoline has soaked into them.

Touch the tip of the fuel container to a metal part of the engine to avoid causing static sparks.

ATTENTION:

- *Use only fresh, clean gasoline that is stored in a clean container that is not contaminated with water or other products.*

Motor oil: Semi-synthetic oil for 2-stroke outboard engines is recommended. Examples of preparing a motor mixture:

Run-in		25:1				
	Petrol	1l	5l	12l	14l	24l
	Oil	0.04l	0.2l	0.48l	0.56l	0.96l
After running in		50:1				
	Petrol	1l	5l	12l	14l	24l
	Oil	0.02l	0.1l	0.24l	0.28l	0.48l

ATTENTION:

- *Make sure the gasoline and oil are completely mixed, otherwise the engine may be damaged.*

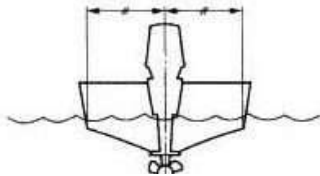
Screw selection.

The choice of propeller has a significant impact on the performance of your motor, since the wrong choice can have a negative impact on performance. At the factory, the motor is equipped with propellers selected to ensure that the motors best match the stated characteristics, but it is possible to use a propeller with a different performance to obtain optimal results in certain conditions. Our dealers will offer propellers that can be installed on your motor and that are best suited for your operating conditions.

For boats with a large load capacity and low speed, propellers with a lower capacity are more suitable, on the other hand, for boats with a smaller load capacity, a propeller with a higher capacity is better to maintain optimal engine speed.

Exploitation

Installation.



Mount the outboard motor on the centerline (keel line) of the boat. For asymmetrical or keelless boats, consult your dealer.

1. Center line (keel lines)

NOTE:

When testing on the water, check the buoyancy of the boat at rest with maximum load. Check the exhaust window to ensure that the water level does not threaten to enter the engine during rough seas if the boat is not moving..



WARNING!

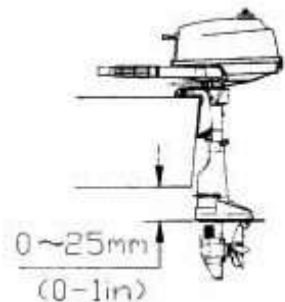
Too powerful engine Maybe call unstable behavior boats. Not install a motor that exceeds the power value indicated in the table of maximum values on the boat plate. If your boat does not have this label, check with your boat manufacturer.

Improper installation of a boat motor can lead to dangerous consequences. It would be better if the motor is installed by our dealer or a person with such experience. If you are going to install the motor yourself, consult with specialists. To learn how to install light motors, contact our dealer or other specialist and they will show you how to do it correctly.

The information provided in this section may be used as a reference. Proper installation depends partly on experience and partly on how well the boat and engine match.

Height adjustment.

The seaworthiness of the boat depends on the correct installation of the outboard motor in height; if the motor is placed too high, the likelihood of cavitation increases, which, if it occurs, significantly reduces traction. If the motor is mounted too low, water resistance increases and the motor loses efficiency. Install the motor so that the anti-cavitation plate is 25mm below the bottom of the boat.

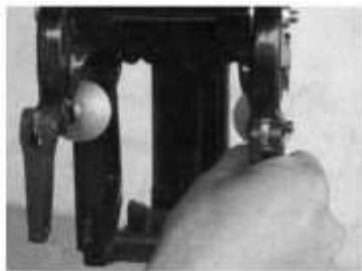


NOTE:

The optimal mounting height for your outboard motor depends on the compatibility of your boat and motor and how you want to use them. Check on the fly how the behavior of the boat and motor changes with different installations and this will help you choose the optimal height. For more information, please contact our dealer or boat manufacturer.

Motor mount.

1. Tighten the mounting screws securely and evenly. Constantly check the reliability of the engine mounting because... they may become loose due to engine vibration.



WARNING!

If the mounting screws come loose, the engine may fall off or hang loose on the transom. This may cause you to lose control of the boat.

Make sure the mounting screws are securely tightened. Constantly check their tightness during operation.

2. If the motor is equipped with an emergency lanyard, be sure to use it. Attach it to the boat and it will help avoid complete loss of the motor if the main mount for some reason fails and

the motor will fall off the transom.

3. Attach the emergency cable bracket to the transom using the appropriate bolts. Please consult our dealer for details.

ATTENTION:

- ***Do not use bolts or nuts that are susceptible to contact with water. After tightening, start the engine and check again that they are tightened well.***

Running in the engine.

Your new engine requires a break-in period to better break in the surfaces of the moving parts and ensure uniform wear.

Gasoline to oil ratio.

Run-in		25:1				
	Petrol	1l	5l	12l	14l	24l
	Oil	0.04l	0.2l	0.48l	0.56l	0.96l

NOTE:

Failure to perform the break-in procedure may lead to a reduction in engine life or even to engine failure.

1. First 10 minutes: Let it idle.
2. Next 50 minutes: Run the engine at 3000 rpm or approximately half throttle.
3. Next 2 hours: Run engine at 4000 rpm or approximately ¾ throttle.
4. Next 7 hours: Avoid opening the throttle fully for more than 5 minutes continuously.

5. Normal operation of the motor.

Check before launch.

Fuel.

- Make sure you have enough fuel for the entire route.
- Make sure there are no fuel leaks or gasoline vapors.
- Make sure all connections in the fuel system are secure.
- Make sure the fuel tank is level and that it is not deformed, chafed, or in contact with sharp objects.

Control.

- Check the throttle, switches, and steering gear before starting the engine.
- Controls should move smoothly without binding or wobbling.
- Check the integrity and reliability of all connections.
- Check the functionality of the starting mechanism and mode switch when the motor is already on the water.

Engine

- Check that the motor is securely secured.
- Check that the emergency cable is not lost or damaged.
- Check if the screw is damaged.



WARNING!

If any pre-start check item does not work properly, it must be inspected and corrected before starting the engine in order to avoid accidents.

ATTENTION:

- ***Do not start the engine when not in the water. Overheating can cause serious damage engine.***

Refueling.

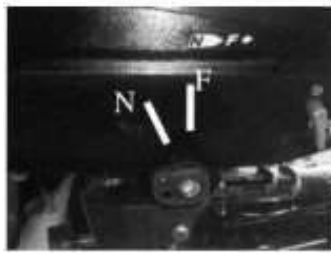


Gasoline and its vapors are highly flammable and explosive. Keep it away from burning cigarettes, sparks, flames and other sources of fire.



1. Open the fuel tank cap.
2. Carefully fill the fuel tank.
3. Close the tank carefully after refueling. Wipe up any spilled fuel.

Engine starting.



1. Loosen the breather screw on the fuel tank cap 2 or 3 turns.
2. Open the fuel valve.
3. Translate switch modes transmission to position N (neutral).

ATTENTION:

- *The engine must be started in N (neutral) to avoid accidents.*
- *Do not attach the safety cord to clothing that may fly off. Do not place the pin cord where it could get tangled, which could make it difficult to operate.*

- ***Avoid accidentally pulling the cord while the engine is running. A sudden loss of engine power causes deterioration in controllability. When the engine is turned off, the boat slows down quickly. This can cause people and objects in the boat to suddenly move forward.***

NOTE:

Attach the safety cord to a secure place on your clothing, arm or leg. Then insert the pin on the other end of the cord into the kill switch on the motor.



4. Place the ignition switch in the start position.
5. If the engine is cold, move the choke to the closed choke position. Open the throttle as the engine warms up. Open the throttle fully when the engine is warm.

NOTE:

- *There is no need to close the throttle when starting a warm engine.*
- *If you do not open the throttle while driving, the engine will begin to choke or stall.*



6. Slowly pull the starter handle until you feel resistance. Then pull it firmly to turn the crankshaft and start the engine. Repeat as necessary.
7. Once the engine has started, slowly return the recoil starter handle to its place and then release.
8. Slowly move the throttle to the closed throttle position.

ATTENTION:

- *If the engine is cold, you need to warm it up.*
- *If the engine does not start on the first try, repeat the procedure.*
- *If the engine does not start after 4-5 attempts, turn the throttle between 1/8 and 1/4, and try again.*

Warming up the engine.



1. Start the engine.
2. After starting the engine, let it idle for 3 minutes to warm up. Failure to do this reduces engine life. Gradually move the throttle to the open position as the engine warms up.
3. Check that cooling water flows smoothly through the inspection hole.

ATTENTION:

If water does not always flow out of the hole when the engine is running, stop the engine and check to see if the cooling inlet port at the bottom or the inspection hole is clogged.

If the problem is not found and corrected on site, please contact our dealer.

Switching.

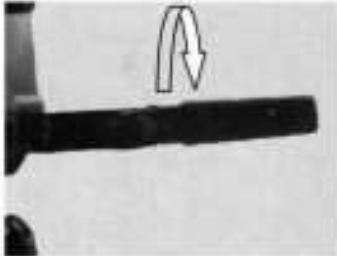
 **WARNING!**

Before engaging the gear, make sure that there are no people or objects near the engine.

ATTENTION:

Before shifting from Neutral (N) to Forward (F) or vice versa, move the throttle to the idle position.

Forward.

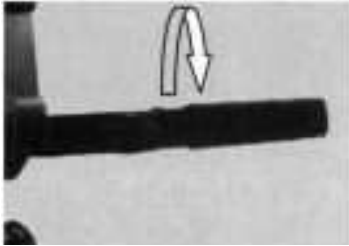


1. Move the throttle stick to the idle position.
2. Shift the transmission mode selector from neutral (N) to forward (F) quickly and accurately.

Reversing.

 **WARNING**

- Reverse slowly and do not turn the throttle more than halfway. Otherwise The boat may behave unpredictably and lose control, which could result in an accident.



1. Place the throttle stick to position idle move.
2. Turn the motor to 180°.
3. Switch mode selection lever
The transmission operates from the neutral (N) position to the forward (F) position quickly and accurately.

NOTE:

Make sure the tilt lock lever is in the locked/down position.

Tiller.

Change of direction.

To change direction, turn the tiller right or left as needed.



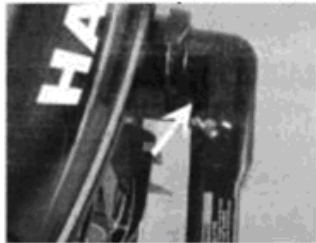
Changing the speed of movement.

Smoothly turn the throttle to increase or decrease speed.

1. The FUEL throttle indicator shows the approximate amount of fuel consumed at each throttle position. You can choose options that will provide maximum performance and fuel economy under different driving conditions.



1 - Throttle (gas) opening indicator



2. Throttle grip slide control

The throttle slide control is located on the tiller, and provides the necessary resistance to the movement of the throttle and can be set at the operator's request.

To increase resistance, turn the control clockwise and vice versa. When the desired speed is reached, tighten the adjuster to lock in the desired throttle setting.



WARNING!

Do not over-tighten the slide adjuster. If there is too much resistance, it may be difficult to rotate the throttle, which could lead to an accident.

Stopping the engine.

NOTE: Before turning off the engine, allow it to cool by idling or idling. A sudden stop of the engine at full power is not advisable.

PROCEDURE:



1. Press and hold the STOP button until the engine stops completely.

NOTE:

If the engine is equipped with an emergency engine stop pin with a cord, the engine can be turned off by pulling the pin.

2. Tighten the breather screw on the fuel tank cap and set the fuel cock to the closed position.

Motor tilt.

There are 5 holes in the motor mounting bracket for changing the angle of inclination.

1. Stop the engine.
2. Carefully pull out the retaining pin of the mounting bracket, lifting the motor slightly.
3. Move the pin into the desired hole. Try different motor angles that work best for the boat under different operating conditions.



WARNING!

- **Always stop the engine before adjusting the engine tilt.**
- **Carefully insert and remove the pin to avoid distortion.**
- **Be careful after the first adjustment. Gently increase speed while watching for signs of boat instability or loss of control.**
- **Incorrect tilt angle may cause loss of control.**

Lifting the engine (strong tilt).

If the engine is stopped for a period of time or if the boat is moored in the shallows, the engine should be raised to protect the propeller and surrounding parts from damage from collisions with obstacles and also to reduce the likelihood of corrosion.



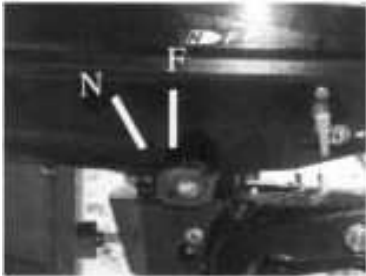
WARNING

- **Make sure that there are no people nearby when tilting the motor up and down, and be careful not to get any body parts pinched between the motor housing and the mounting bracket.**
- **Tighten the breather screw and turn the fuel valve to the closed position if the engine is raised for more than a few minutes. Otherwise, fuel may begin to leak.**

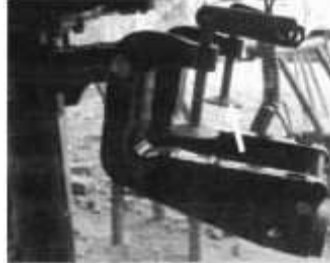
NOTE:

- *Do not lift the engine by the tiller as this may damage it.*
- *The engine must not be raised when it is in reverse.*

Climb.



1. Place the shift lever in neutral (N) and turn the engine straight forward.



2. Tighten the motor slip adjuster screw clockwise to prevent it from rotating freely.

3. Tighten the gas tank bleeder screw.

4. Close the fuel valve.

5. Grasp the rear handle and tilt the engine completely until the lock that supports the engine in the raised position engages.

Descent.



1. Raise the motor slightly.

2. Slowly lower the motor while pressing the motor support lock down.

3. Unscrew the motor steering friction adjuster by turning it counterclockwise to the required force.

 **WARNING**

- Too much steering friction can lead to an accident.

Movement in different conditions.

Movement in shallow water.

For movement in shallow water, the motor can be partially raised.

 **WARNING**

When driving in shallow water, the lock mechanism must not be closed. Move at the lowest possible speed, avoiding raising the engine above the water, as this may cause the boat to lose control.

Return the motor to normal position once you have reached sufficient depth.

ATTENTION:

- ***The water cooling inlet port should not be above the surface of the water when you install the motor for shallow water travel. Otherwise, the engine may fail due to overheating. How to raise the motor, see the TILT section.***

Movement on salt water.

After driving through salt water, flush the cooling water passages with fresh water to prevent salt deposits from clogging them.

Service.

To ensure proper performance, a boat motor requires regular maintenance. The "#" symbol means that you can perform these actions yourself. The "O" symbol indicates that these steps must be performed by our dealer.

Paragraph	Works	Primary		Subsequent	
		10 hours (1 month)	50 hours (3 months)	100 hours (6 months)	200 hours (1 year)
Anode(s)	Check/Replace		# /0	# /0	
Movement of cooling water	Flushing		#	#	
Fairing latch	Examination				#
Fuel filter (in tank)	Check/clean				0
Fuel system	Examination	#	#	#	
Fuel tank (built-in)	Check/clean				0
Transmission oil	Replacement	#		#	
Lubrication points	Lubrication			#	
Idle speed (carburetor)	Examination	# /0		# /0	
Screw and cotter pin	Check/Replace		#	#	
Gear Shift Connection	Check/Adjustment				0
Thermostat	Check/Replace				0
Throttle connection/throttle cable/sync	Check/Adjustment				0
Cooling pump	Check/Replace				0
Spark plug	Cleaning/Adjustment/Replacement	#			#
Muffler/manifold	Check/Replace				0

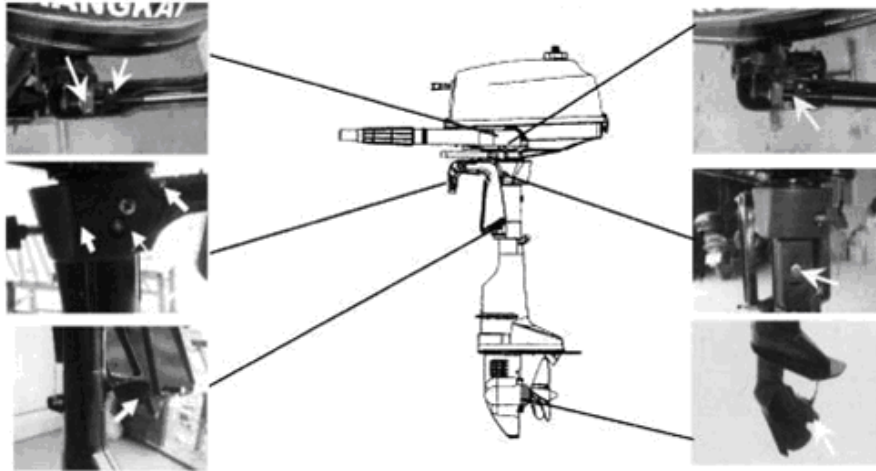
 **WARNING!**

Be sure to turn off the engine before performing maintenance, regardless of the list of work. If you do not have experience in servicing gasoline-powered equipment, contact our dealer or any other qualified service center.

ATTENTION:

- If replacement of any parts is necessary, use only original HANGKAI spare parts or the same spare parts of equivalent strength and material quality.***

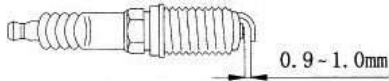
Lubrication points.



Cleaning and adjusting spark plugs.

You should periodically unscrew and check the spark plugs, because under the influence of high temperatures and carbon deposits, the spark plugs gradually fail and are destroyed.

If necessary, you can replace the candles with others of the same type. Before screwing in the spark plug, measure the gap between the electrodes with a feeler gauge; If necessary, adjust the gap according to the table. Every time you screw in the spark plug, clean or replace the O-ring. Clean both the threads on the engine and the spark plug so they turn on easily.



Checking the fuel system.

Check the fuel line for leaks, cracks, blockages, and kinks. If a malfunction is found, please contact our dealer or other qualified service center to have the problem repaired immediately.



WARNING!

Check the fuel system regularly for leaks.

Any fuel system leaks found must be repaired by a qualified mechanic.

Checking idle speed.

A tachometer should be used to check. Results may vary depending on whether the test is performed in a test tank or on water.

1. Start the engine and allow it to warm up until it runs smoothly.
2. Check if the idle speed matches the value in the table. Idle speed: 1300±50 rpm. **ATTENTION:**

- ***Correctly determining the idle speed can only be done on a well-warmed-up engine. If the engine is not warm enough, the idle speed may be higher than normal. If you are unable to measure the idle speed, or if it requires adjustment, consult our dealer or another qualified mechanic.***

Checking wiring and electrical connections.

Check the reliability of each wire at the base and the quality of all connections.

Check for leaks.

Check that there are no exhaust gas or water leaks from the connections between the muffler, cylinder and

engine cylinder head.

Make sure there are no oil leaks in the entire engine.

ATTENTION:

- ***If any leaks are found, consult our dealer.***

Checking the screw.



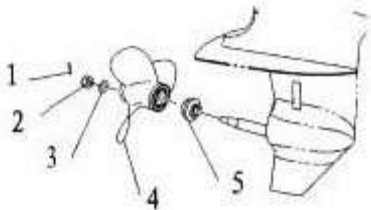
Before checking, removing or installing the screw, ensure that the engine cannot be started accidentally, such as removing the spark plug cap, setting the transmission mode selection to the neutral (N) position, and removing the engine emergency stop check, etc. A rotating propeller can cause serious injury.



1. Check each propeller blade for wear, damage from cavitation and rotation, and other damage.
2. Check the propeller shaft for damage and wear.
3. Check the cotter pins for damage and wear.
4. Check the fish removal at the propeller shaft.
5. Check the propeller shaft seal for damage.

Removing the screw.

1. Straighten the cotter pin and pull it out with pliers.
2. Remove the screw and support washer.



1. Cotter pin
2. Nut
3. Washer
4. Screw
5. Support washer

Installing the screw.

ATTENTION:

Install the support washer before installing the propeller, otherwise the gearbox housing and propeller hub may be damaged.

Always use a new cotter pin and bend the ends securely. Otherwise, the screw may fly off while moving and get lost.

1. Apply water-repellent or anti-corrosion lubricant to the propeller shaft.
2. Install the gasket (if provided), back-up washer, and screw onto the shaft.
3. Install the gasket (if provided) and washer.
4. Tighten the nut. Align the grooves of the nut with the hole on the shaft. Insert a new cotter pin and straighten its ends.

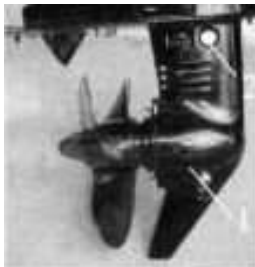
Changing the oil in the gearbox.



WARNING!

Make sure the motor is securely mounted to the transom or stand.

Avoid standing under the bottom of the motor when the motor is raised, even if the motor holding latch is closed. Falling motor can cause serious injury.



1. Tilt the motor so that the plug The oil filler was in the lowest position.
 2. Substitute suitable capacity size for the gearbox housing.
 3. Unscrew the filler plug.
- 1 - Filling plug. 2 - Control hole.

ATTENTION:

Change the transmission oil after the first 10 hours of operation, and then every 100 hours of operation or every 6 months for lower mileage. Otherwise, the gearbox will quickly wear out.

4. Unscrew the inspection hole plug to allow the oil to drain better.

ATTENTION:

After the oil has drained, examine it carefully. If an emulsion (white oil) appears, this means that water is entering the crankcase and can cause gearbox failure. Please consult our dealer.

5. Using a flexible container or syringe, pour oil through the filler hole.

6. When oil appears in the control hole, insert the plug there and tighten (if necessary replace the gasket).

7. Insert and tighten the filler plug (replace the gasket if necessary).

Checking and replacing anodes.

Check the external anode periodically. Remove scale from the anode surface. Consult our dealer for anode replacement.



ATTENTION:

Do not apply paint to the anodes, as this may reduce their effectiveness and cause accelerated corrosion of the motor.

Checking the upper fairing.

Check the fastening of the upper fairing by pushing it with both hands. If it is loose, please have it repaired by our dealer.



Maintenance schedule.

If the motor is operated under normal conditions, maintained and repaired properly, it will easily work out its entire service life.

Maintenance intervals should correspond to the intensity of use, but the following table provides basic guidelines.

Transportation and storage.

Shipping.

The outboard motor must be transported and stored in its normal operating position. If there is not enough height to transport in this position, then transport the motor in a raised position using a special mounting.

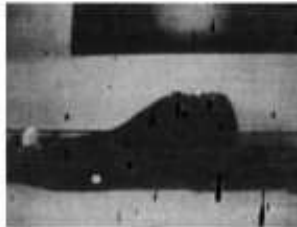
ATTENTION:

Do not use the motor lifter when transporting a boat with the motor on the transom. The motor may become loose, jump off the retainer and fall.



WARNING

- **Avoid standing under a raised engine, even if additional support is used.**
- **When transporting and storing the motor separately from the boat, place it in a visible place.**



ATTENTION:

Place a soft mat or something similar under the motor to protect it from damage.

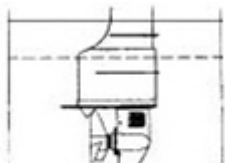
Storage.

When storing your outboard motor for a long period of time (2 months or longer), there are several important procedures that need to be followed to prevent damage.

We recommend preparing the motor for long-term storage at our dealers. However, you yourself, having a minimum set of funds, can perform the following operations.

ATTENTION:

- ***Do not place the engine on its side until the water from the cooling system has completely drained from the engine.***
- ***Store the motor in a dry, well-ventilated area, avoiding direct sunlight.***



1. Wash the engine with clean fresh water.
2. Close the fuel valve, disconnect the fuel line and close the vent.
3. Remove the upper fairing and noise insulation.
4. Place the motor in the test container.
5. Fill the test container with water until the anti-cavitation plate is hidden.

ATTENTION:

If the water level is below the anti-cavitation plate, or the incoming water is not enough, the engine may seize.

6. Start the engine. Flush the cooling system. Simultaneously with washing, apply the "Fogging Oil" treatment, which will help protect the engine from rust.



WARNING!

Do not touch or move parts of the electrical system when starting or operating the engine. Keep your hands, hair, and clothing away from the flywheel and other rotating parts of the engine while it is running.

7. Let the engine idle for a few minutes in neutral (N)
8. Then close the tap and squirt "Fogging Oil" into the inlet

carburetor, or a special hole for preservation on the intake muffler until the engine stalls.

9. If you do not have Fogging Oil, close the fuel valve and wait until the engine has used up all the fuel in the carburetor and stalls.
10. Then unscrew the spark plug, pour 20-30 ml of clean engine oil into the cylinder. And crank the engine several times with a recoil starter. Screw the spark plug back in.
11. Drain all fuel from the tank.

ATTENTION:

Store the additional fuel tank in a dry, well-ventilated area, avoiding direct sunlight.

Safety.

Actions in case of damage.

If the outboard motor strikes an object in the water, proceed as follows: 1. Stop the engine immediately.

2. Check the steering and other elements for damage.

3. Regardless of whether damage is detected or not, slowly and carefully get to the nearest place where you can moor.

4. Have the motor inspected by our dealer before operating again.

The starter does not work.

If the recoil starter mechanism fails, the engine can be started using the emergency starter cord:

1. Use this method only in an emergency and only to return to a place where you can moor.

2. Make sure that no one is standing behind you when you pull the starter cord. He can whip hard and

injure the person behind.

3. Do not attempt to reinstall the trigger and upper fairing once the engine is running. Keep loose clothing and other objects away from the running engine. Do not touch the flywheel or other moving parts while the engine is running.
4. Do not touch the magneto, high-voltage wire, spark plug cap and other parts that are live while the engine is starting and running.

The startup procedure is as follows:



1. Remove the upper fairing.

2. Remove the starter by unscrewing the three bolts.

3. Prepare the engine for start. For detailed information see section 2.5.

4. Insert the knotted end of the emergency starter into the slot in the flywheel rotor and make several turns clockwise around the flywheel.

5. Pull the cord until you feel resistance.

6. Give a strong jerk to crank and start the engine.



Restoring the performance of a sunken motor.

If the motor has been completely submerged in water, take it to our dealer immediately.

Otherwise, corrosion will occur in the engine.

1. Rinse off dirt completely with clean water.
2. Remove the spark plug. Then turn the engine down with the spark plug hole to allow dirt and other impurities to flow out.
3. Pour some engine oil into the engine sump.
4. Squirt Fogging Oil into the carburetor and spark plug hole, or pour in a little motor oil while cranking the engine with the starter.
5. Bring the motor to our dealer as quickly as possible.



ATTENTION:

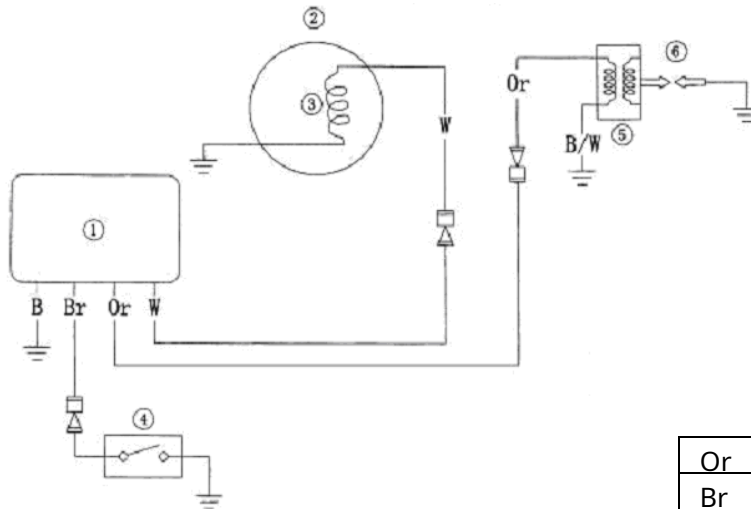
Do not attempt to start the engine until it has been thoroughly inspected.

Trouble-shooting.

Type of malfunction	Possible reason	Remedy
Starter doesn't work	Defective starter parts	Get it repaired by our dealer
Engine won't start (starter works)	No fuel in tank	Fill the tank with clean, fresh fuel
	Fuel is dirty or not fresh	Fill the tank with clean, fresh fuel
	The spark plug is dirty or the wrong type	Check the spark plug. Clean or replace with the correct type of spark plug
	The candle cap is not on correctly	Remove and put on the cap again
	Ignition wiring is damaged or poorly connected	Check the wires for wear and tear. Tighten loose connections. Replace
	Ignition system parts are faulty	Get it repaired by our dealer
	Emergency stop pin not inserted	Insert the receipt
	Damaged internal engine parts	Get it repaired by our dealer
Engine single stalls Not holds rpm	The spark plug is dirty or the wrong type	Check the spark plug. Clean or replace with
	Poor fuel supply	Check for pinched, kinked or other obstructions in the fuel line.
	Fuel is dirty or not fresh	Fill the tank with clean, fresh fuel
	Incorrect spark plug gap	Check and adjust according to the table
	Ignition wiring is damaged or poorly connected	Check the wires for wear and tear. Tighten loose connections. Replace worn or broken wires
	The wrong engine oil is being used	Check and replace with the correct mixture
	Thermostat is faulty or clogged	Get it repaired by our dealer
	Carburetor not adjusted	Get it repaired by our dealer
	Carburetor clogged	Get it repaired by our dealer
	Fuel tank vent is closed	Open the fuel tank vent
	Throttle valve not adjusted	Get it repaired by our dealer
	Enrichment valve closed	Place in working position
	The motor is very tilted	Put it in normal position

The engine does not pull	Damaged screw	Repair or replace the screw
	Incorrect motor tilt	Set the angle of inclination at which the motor pulls best
	The motor is not installed correctly in height	Set the optimal height
	The bottom of the boat is covered with sediment	Clean the bottom of the boat
	Seaweed or other materials wound around the gearbox housing	Clean the bottom of the motor
	The spark plug is dirty or the wrong type	Check the spark plug. Clean or replace with the correct type of spark plug
	Poor fuel supply	Check if the fuel line is pinched, kinked or otherwise
	Fuel is dirty or not fresh	Fill the tank with clean, fresh fuel
	Incorrect spark plug gap	Check and adjust according to the table
	Ignition wiring is damaged or poorly connected	Check the wires for wear and tear. Tighten loose connections. Replace worn or broken wires
	Ignition system parts are faulty	Get it repaired by our dealer
	The wrong engine oil is being used	Check and replace with the correct mixture
	Thermostat is faulty or clogged	Get it repaired by our dealer
	Fuel tank vent is closed	Open the fuel tank vent
Fuel line not connected correctly	Connect correctly	
Installed candle Not appropriate recommendations	Check and replace with the one that is recommended	
The motor vibrates a lot	Damaged screw	Repair or replace the screw
	Damaged propeller shaft	Get it repaired by our dealer
	Algae or other material has become wrapped around the propeller	Clean the screw
	The motor mounting bolts are loose	Tighten the bolts
	Reduced steering friction	Adjust
	Damaged steering mechanism	Get it repaired by our dealer

Electrical diagram.



No.	DESCRIPTION
1	Breaker
2	Magneto
3	Magneto winding
4	Ignition switch
5	Ignition coil
6	Spark plug

		B/W	Black and white
Or	Orange	B	Black
Br	Brown	W	White