

Your guide to

Preventative Maintenance



MAST

MARINE and SAFETY TASMANIA
making boating better

MAST recommends that you give your boat and equipment a thorough pre-season check before you go boating. For your regular servicing and advice on servicing intervals contact your local outboard or diesel engine dealer.

General vessel check

- Inspect boat for corrosion, delamination or rotting, cracks and general wear and tear;
- Test steering for stiffness. Oil the cable with correct lubricant;
- Ensure bung (if applicable) is suitable and in good condition;
- Self draining holes must be clear;
- Check wiring for cracking, loose wires and corrosion;
- Ensure that bilges are clean and dry;
- If LPG is fitted ensure that it is outside, well ventilated and in good condition.

Fuel System Inspection

- Inspect the tank for cracks and corrosion;
- Always replace old fuel with new fuel after periods of inactivity;
- Install a water-separating filter between the tank and motor. This is most important with aluminium and stainless steel inbuilt fuel tanks as condensation can lead to water in your fuel;
- Drain water and debris from fuel filter regularly;
- Inspect fuel lines, priming bulbs and connections for cracks and leaks;
- Maintain correct fuel/oil mixture for your engine. If unsure ask a dealer;
- On vessels with inbuilt fuel tanks keep tanks reasonably full where possible. Also check breathers and fillers and associated pipework.
- Batteries
- Top up battery cells with distilled water and check each cell with a hydrometer. If they do not give similar readings get a specialist's opinion;
- Do not leave a battery in a discharged condition for too long;
- Batteries should be secured in brackets. Their terminals and cables should be free from dirt and moisture. Terminals should be greased regularly.

- If battery is in an enclosed space ensure that space is well ventilated;
- Disconnect in the off-season and preferably keep on charge;
- Test any electrics operating from the battery such as radios and navigation lights.

Safety Equipment Inspection

- Ensure you have the correct safety equipment for the area you intend to operate in. Safety equipment requirements are a minimum – you should always take extra gear;
- Make sure that you and your passengers know where to find safety equipment and how to operate it;
- Inspect all safety equipment for deterioration or damage. Also check expiry dates on flares and service intervals on inflatable PFDs. Service or replace if necessary. Use your EPIRB test function if applicable;
- Test that navigation lights and bilge pump work, if fitted.
- Inspect anchor, shackles, chain and line for any sign of wear or corrosion. Make sure shackles are tight and moused; (pin secured with wire)
- Operate auxiliary engine periodically to ensure it will work when required;
- Make test radio calls regularly to ensure radio is working correctly.

Trailer Maintenance

- Replace deteriorated rollers and adjust their height for even distribution of load;
- Test the indicator and brake lights regularly;
- Check tyre wear and pressure regularly;
- Replace tie down straps if frayed;
- Replace the winch cable/strap if frayed;
- Check tow bar assembly and grease the coupling;
- Keep the brakes serviced and lubricate cables and coupling;
- Inspect wheels and bearings by checking for play in the wheel. Keep bearings filled with grease;
- Make sure trailer is registered and label is displayed.

Recommended spare parts and tools

Owners manual, spare bung (if applicable), pliers, shifting spanner, phillips and flat head screwdriver, dewatering spray, funnel.

In addition to these tools, owners of outboard motors should also carry new spark plugs and spanner, socket for propeller shaft nut, spare propeller nut, washer and split pins, spare fuel and oil (if oil injected), hose clips and electrical tape.

When making long trips, owners of diesel engines should take some spare oil, coolant, water pump impeller, fuel filter,

jumper leads, spare v-belt and flexible hoses for cooling, oil and fuel systems and penetrating oil.

Outboard Motor Maintenance

- Have your engine serviced regularly. Manufacturers usually recommend a service by a specialised workshop at least every 12 months;
- If your vessel does a lot of work the gearbox oil should be changed every 3 months. Follow the manufacturer's service instructions;
- Under no circumstances should an outboard be run out of the water, unless with a flushing adapter;
- Flush the motor in fresh water after each use;
- Spray all moving parts periodically with a spray that will displace water and apply a protective film;
- File small nicks in propeller. If damage is significant get propeller repaired before you next use it;
- Check motor trim hydraulic cylinder for any oil leaks and make sure you know how to override the power tilt should it ever fail.

Diesel Engine Maintenance

Diesel engines are a very reliable source of propulsion, but like any engine, proper maintenance is important. While most work should be carried out by an expert there are a few items that owners should be aware of.

Fuel and Lubricating Oil System

- Ensure fuel breathers are clear but protected from ingress of water and spray;
- Ensure you know how to bleed the fuel system on your diesel engine. Ask your service agent if you are unsure;
- Keep lubricating oil level up to the required level and ensure oil quality is good. Thick, black oil indicates contamination from combustion products (blowby). Thin, light coloured oil indicates fuel contamination.

Cooling System

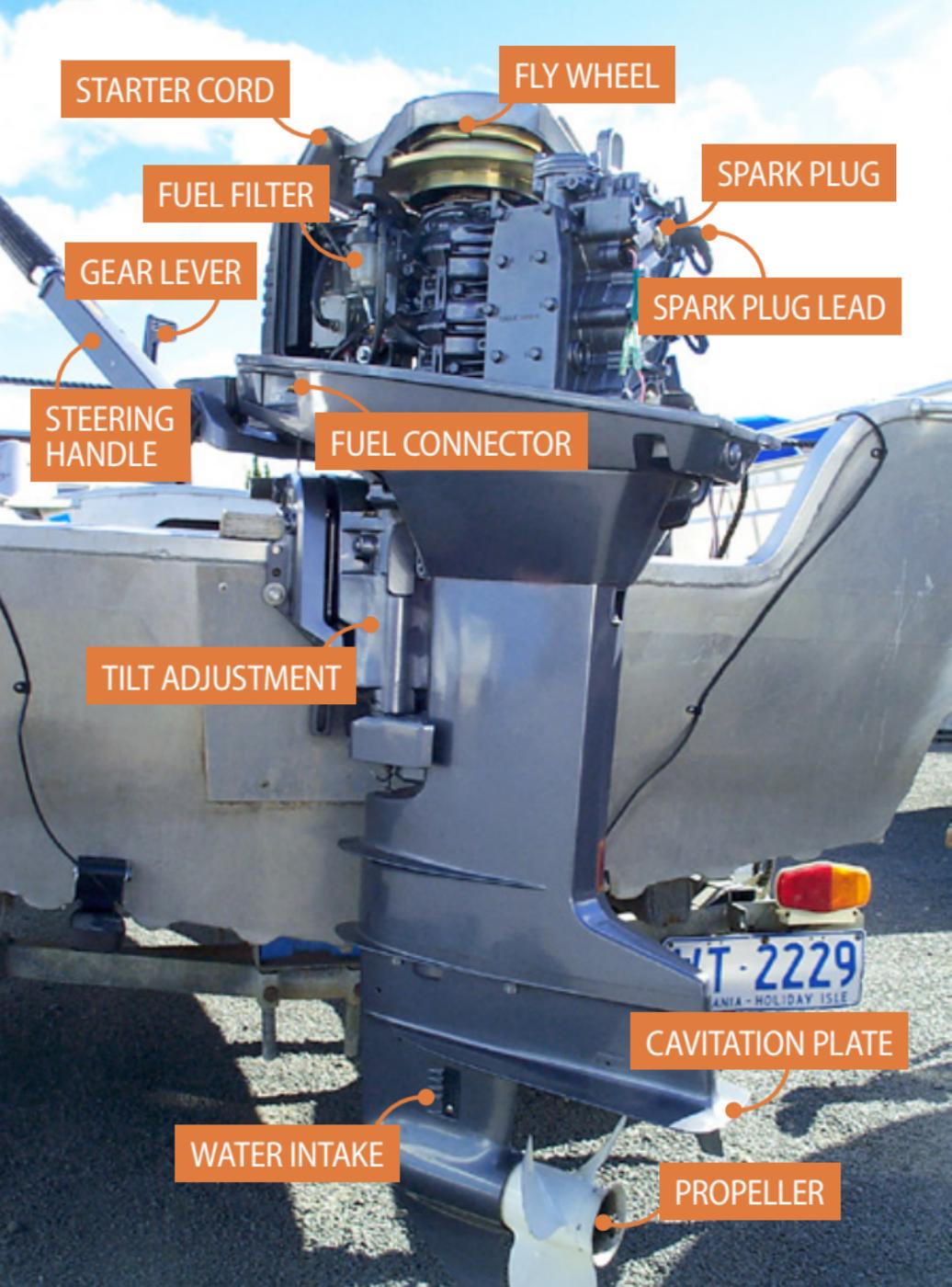
- Keep cooling levels topped up;
- Use an appropriate coolant treatment that provides antifreeze/antiboil and corrosion protection;
- Check hoses and connections for leaks, splits and deterioration;
- Ensure anodes are replaced before they are entirely consumed.

Gearboxes

- Check gearbox oil levels and quality regularly;
- Change gearbox oil and filters in line with manufacturers recommendations;
- Do not change from forward to reverse rapidly otherwise gearbox damage is likely to occur;
- Routinely check that coupling bolts on shafts have not loosened and check stern gland seals. There should be very slight leakage through seal when operating.

Outboard Trouble-shooting Chart

Does not start	Runs irregularly	Starts momentarily then cuts out	Does not idle properly	Motor speed faster than normal	Motor speed slower than normal	Motor overheats	Possible cause of problem
•		•					Fuel tank empty or breather closed
•			•				Motor is cold
•		•					Fuel line is not connected
•	•	•	•				Fuel line is kinked
•							Motor flooded
			•		•	•	Not enough oil in fuel mixture
•							No spark
•	•	•	•				Weak or intermittent spark
•	•	•	•				Debris in fuel and filter
				•	•		Trim angle not correctly adjusted
					•	•	Cooling system blocked
					•	•	Water pump failure
				•	•		Propeller of wrong pitch or diameter
				•			Propeller is damaged
				•	•		Boat improperly loaded
				•			Transom is too high
					•		Transom is too low



STARTER CORD

FLY WHEEL

FUEL FILTER

SPARK PLUG

GEAR LEVER

SPARK PLUG LEAD

STEERING HANDLE

FUEL CONNECTOR

TILT ADJUSTMENT

CAVITATION PLATE

WATER INTAKE

PROPELLER

If your outboard engine won't start follow these points:

- Does the tank have fuel and is the air vent clear?
- Is the fuel line connected?
- Is the fuel bulb hard? If not, squeeze until it is.
- Does the choke fully close?
- Look at carburettor air intake and check.
- Is the motor cranking fast enough? Check battery connections.
- Wait 5 minutes and try again. Motor may be flooded.
- Is the battery flat? If so start motor with a rope around the flywheel.
- Is the starter cord broken? If so also start motor with a rope around the flywheel.
- Perhaps clean or change spark plugs and try again.

Next time you go boating you will be confident knowing that your boat has been serviced and is well prepared but equally important is the weather forecast.

Check the weather forecast before you go boating. It is no good having the best prepared boat in the worst imaginable weather!

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North-Western Tasmania Ph: 6323 2555

Eastern Tasmania Ph: 6376 0555

Southern Tasmania Ph: 6233 9955

Bureau of Meteorology: www.bom.gov.au

For further information contact your local service centre or MAST Marine and Safety Tasmania

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For information on facilities and other important issues visit our website at

www.mast.tas.gov.au



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