



2008 WaveRunner FX High Output FX Cruiser High Output

OWNER'S/OPERATOR'S MANUAL

**READ THIS MANUAL
CAREFULLY BEFORE OPERATION!**

U.S.A. Edition

YAMAHA MOTOR CORPORATION, USA

LIT-18626-07-50

F1X-F8199-12

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

YAMAHA

LIT-CALIF-65-01

Important manual information

EJU30180

To the owner/operator

Thank you for choosing a Yamaha watercraft. This owner's/operator's manual contains information you will need for proper operation, maintenance, and care. A thorough understanding of these simple instructions will help you to obtain maximum enjoyment from your new Yamaha. If you have any questions about the operation or maintenance of your watercraft, please consult a Yamaha dealer. Because Yamaha has a policy of continuing product improvement, this product may not be exactly as described in this owner's/operator's manual. Specifications are subject to change without notice.

This manual should be considered a permanent part of this watercraft and should remain with it even if the watercraft is subsequently sold.

In this manual, information of particular importance is distinguished in the following ways:



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

EWJ00070



WARNING

Failure to follow WARNING instructions could result in severe injury or death to the machine operator, passengers, a bystander, or a person inspecting or repairing the watercraft.

ECJ00090

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the watercraft.

NOTE:

A NOTE provides key information to make procedures easier or clearer.

EJU30220

**WaveRunner FX High Output/
FX Cruiser High Output
OWNER'S/OPERATOR'S MANUAL
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P/N LIT-18626-07-50

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General and important labels

EJU30260

Identification numbers

Record the Primary Identification (PRI-ID) number, Hull Identification Number (HIN), and engine serial number in the spaces provided for assistance when ordering spare parts from a Yamaha dealer. Also record and keep these ID numbers in a separate place in case your watercraft is stolen.

EJU30281

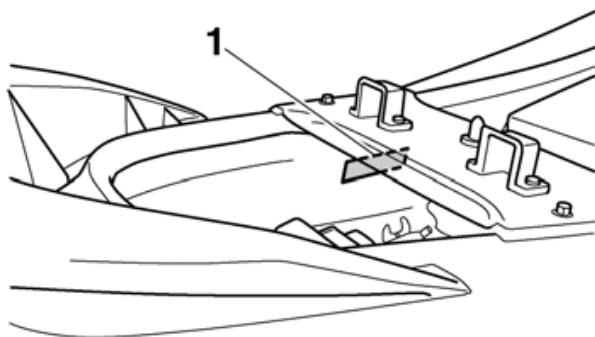
Primary Identification (PRI-ID) number

The PRI-ID number is stamped on a plate attached inside the engine compartment.

MODEL:

FX1100-G (FX High Output)

FX1100A-G (FX Cruiser High Output)



1 Primary Identification (PRI-ID) number location

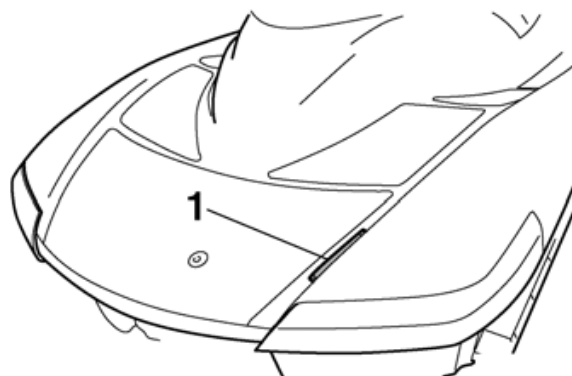
MODEL		PRI-ID.	
		FIX	
YAMAHA MOTOR CO., LTD. ASSEMBLED IN U.S.A. FROM AMERICAN AND JAPANESE COMPONENTS. ASSEMBLÉ AUX ÉTATS-UNIS DE PIÈCES AMÉRICAINES ET JAPONAISES.			

F1X -

EJU30300

Hull Identification Number (HIN)

The HIN is stamped on a plate attached to the aft deck.



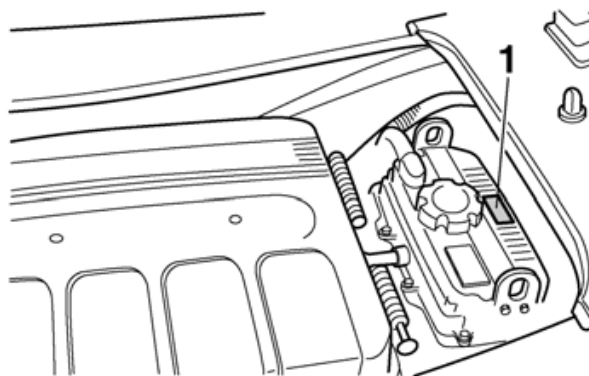
1 Hull Identification Number (HIN) location

US-YAM

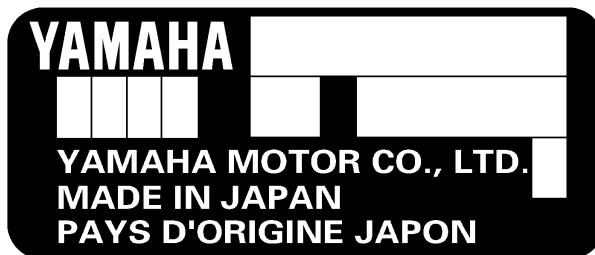
EJU30310

Engine serial number

The engine serial number is stamped on a plate attached to the engine unit.



1 Engine serial number location



General and important labels

EJU30340

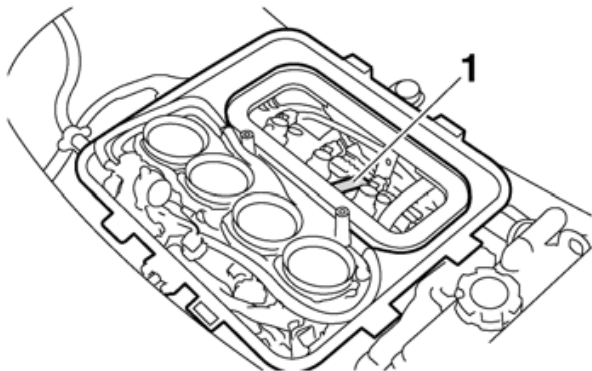
Emission control information

This engine conforms to 2008 U.S. Environmental Protection Agency (EPA) regulations for marine SI engines.

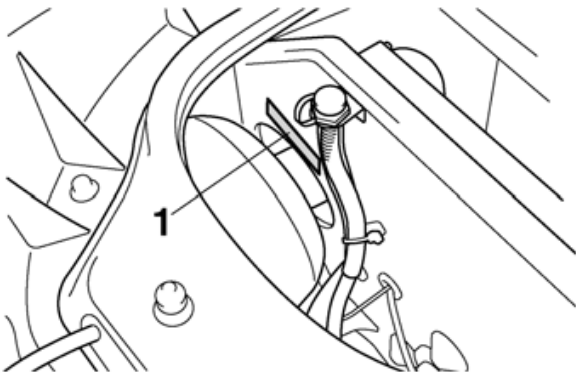
EJU30390

Approval label of emission control certificate

This label is attached to the top of the cylinder head and to the bulkhead.



1 Emission control information label location



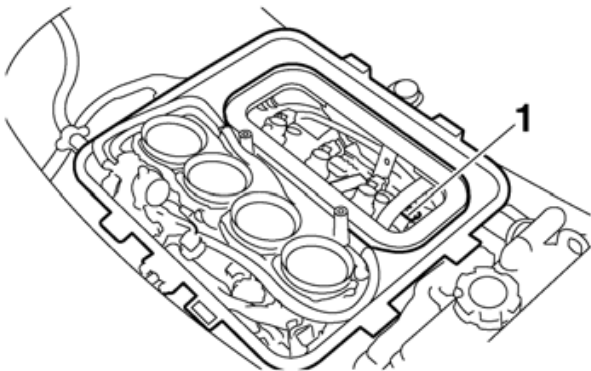
1 Emission control information label location

EMISSION CONTROL INFORMATION			MFI
ENGINE FAMILY: _____			
THIS ENGINE CONFORMS TO U.S. EPA EMISSION REGULATIONS FOR SI MARINE ENGINES. REFER TO THE OWNER'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS.			
FUEL: _____ 1.2 gallon/hr	ADVERTISED POWER: _____ 1.1 hp	FUEL UNLEADED REGULAR GASOLINE	
SPARK PLUG: _____	TROLLING SPEED: _____ 1.2 rpm	VALVE LASH(mm/in): _____ Ex: _____	
DISPLACEMENT: _____ 1.2 cm³	SPARK PLUG GAP(mm): _____		
YAMAHA MOTOR CO.,LTD.			

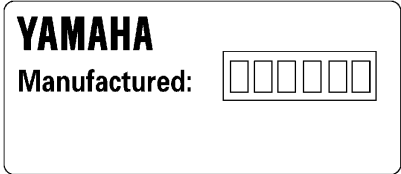
EJU30430

Manufactured date label

This label is attached to the top of the cylinder head.



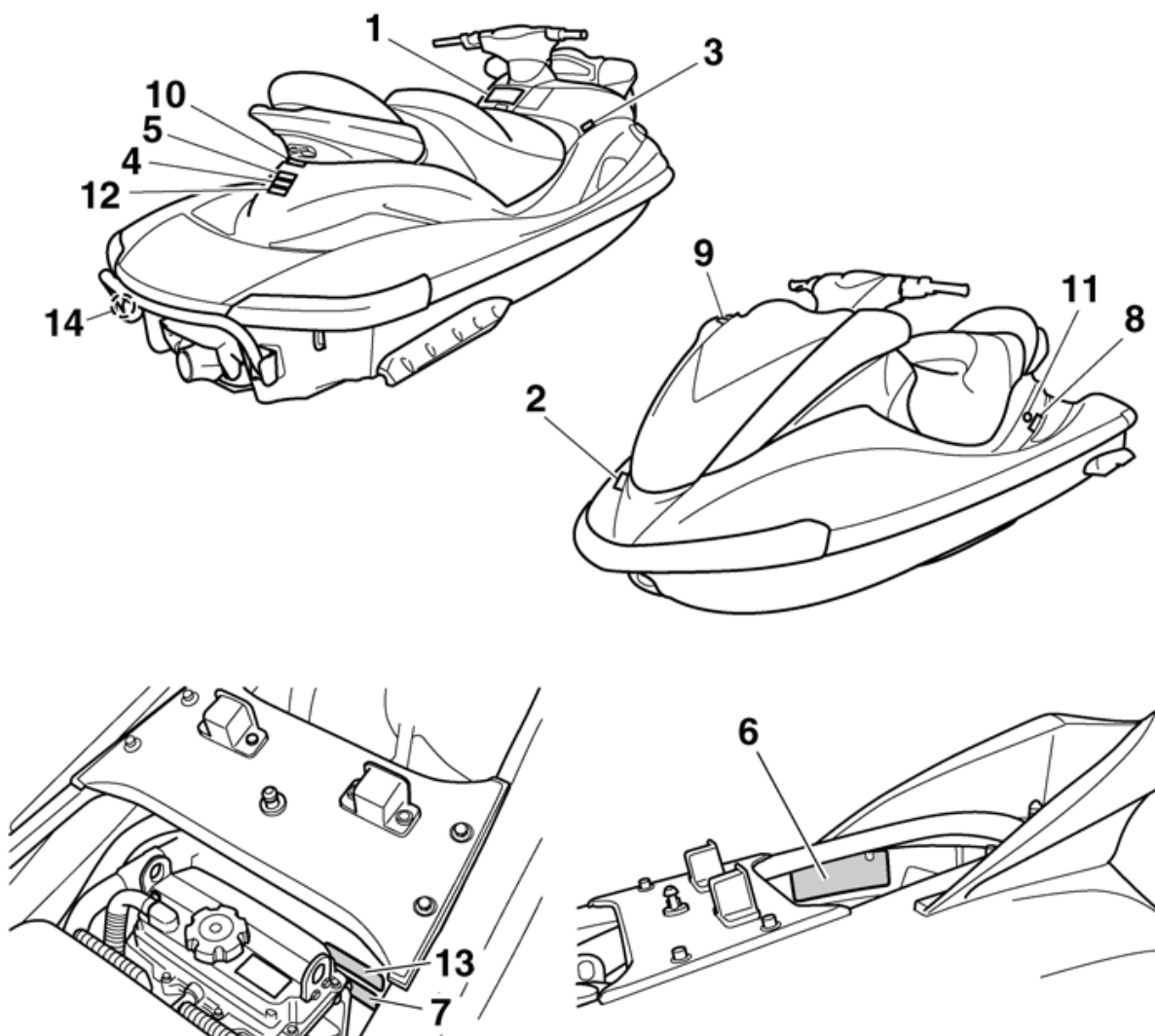
1 Manufactured date label location



General and important labels

EJU30450

Important labels



General and important labels

EJU35910

Warning labels

1

WARNING

To reduce the risk of SEVERE INJURY or DEATH:

WEAR A PERSONAL FLOTATION DEVICE (PFD).
All riders must wear a Coast Guard approved PFD that is suitable for personal watercraft (PWC) use.

WEAR PROTECTIVE CLOTHING. Severe internal injuries can occur if water is forced into body cavities as a result of falling into water or being near jet thrust nozzle. Normal swimwear does not adequately protect against forceful water entry into rectum or vagina. All riders must wear a wet suit bottom or clothing that provides equivalent protection (See Owner's Manual).

Footwear, gloves, and goggles/glasses are recommended.

KNOW BOATING LAWS. Yamaha Motor Co., Ltd. recommends a minimum operator age of 16 years old. Know the operator age and training requirements for your state. A boating safety course is recommended and may be required in your state.

ATTACH ENGINE SHUT-OFF CORD (LANYARD) to wrist and keep it free from handlebars so that engine stops if operator falls off. After riding, remove cord from PWC to avoid unauthorized use by children or others.

RIDE WITHIN YOUR LIMITS AND AVOID AGGRESSIVE MANEUVERS to reduce the risk of loss of control, ejection, and collision. This is a high performance boat – not a toy. Sharp turns or jumping wakes or waves can increase the risk of back/spinal injury (paralysis), facial injuries, and broken legs, ankles, and other bones. Do not jump wakes or waves.

DO NOT APPLY THROTTLE WHEN ANYONE IS AT REAR OF PWC—turn engine off or keep engine at idle. Water and/or debris exiting jet thrust nozzle can cause severe injury.

KEEP AWAY FROM INTAKE GRATE while engine is on. Items such as long hair, loose clothing, or PFD straps can become entangled in moving parts resulting in severe injury or drowning.

NEVER RIDE AFTER CONSUMING DRUGS OR ALCOHOL

Collisions result in more INJURIES AND DEATHS than any other type of accident for personal watercraft (PWC).
TO AVOID COLLISIONS:
SCAN CONSTANTLY for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.
OPERATE DEFENSIVELY at safe speeds and keep a safe distance away from people, objects, and other watercraft.

- Do not follow directly behind PWCs or other boats.
- Do not go near others to spray or splash them with water.
- Avoid sharp turns or other maneuvers that make it hard for others to avoid you or understand where you are going.
- Avoid areas with submerged objects or shallow water.

TAKE EARLY ACTION to avoid collisions. Remember, PWCs and other boats do not have brakes.
DO NOT RELEASE THROTTLE WHEN TRYING TO STEER away from objects – you need throttle to steer.
Always check throttle and steering controls for proper operation before starting PWC.
Follow navigation rules and state/province and local laws that apply to PWCs. See Owner's Manual for more information.

READ AND FOLLOW OWNER'S MANUAL
YAMAHA

F1X-U41B1-00

2

WARNING

Gasoline is highly flammable and explosive. A fire or explosion could cause severe injury or death. Shut engine off. Refuel in well ventilated area away from flames or sparks. Do not smoke. Avoid spilling gasoline. Wipe up spilled gasoline immediately. Remove all seats to ventilate fuel vapors from engine compartment before starting engine. Do not start engine if there is a fuel leak or a loose electrical connection.

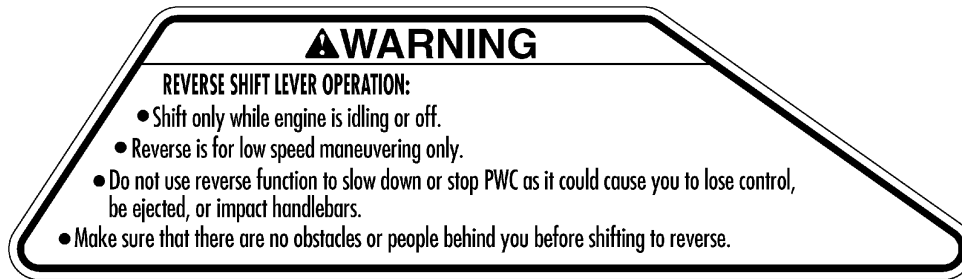
REGULAR UNLEADED GASOLINE ONLY

YAMAHA

F1S-U415B-01

General and important labels

3



F0V-U41D5-21

4



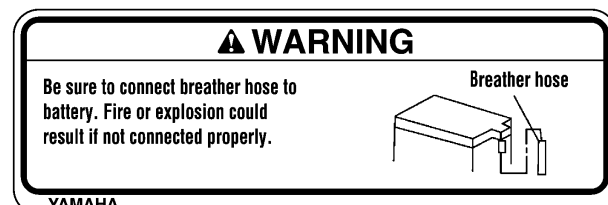
(F1S-U41E1-01)

5



(F1S-U41E1-01)

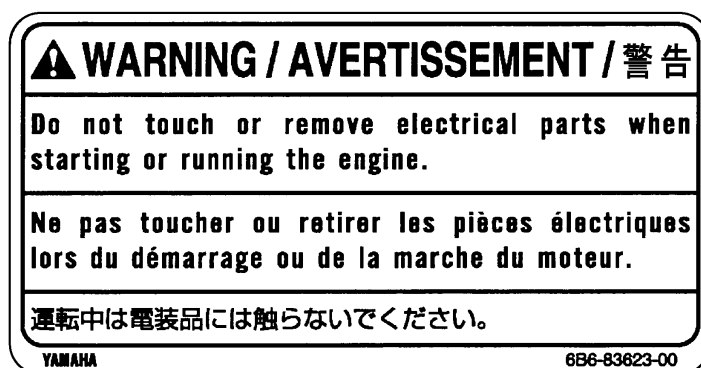
6



YAMAHA

F0V-U41DB-02

7



YAMAHA

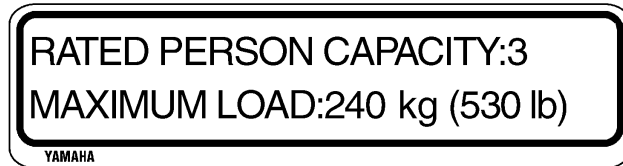
6B6-83623-00

General and important labels

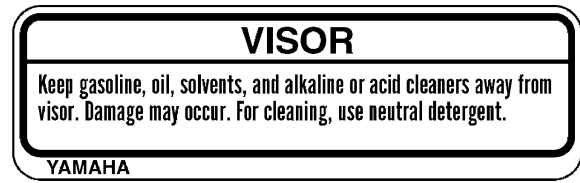
EJU35923

Other labels

8



9



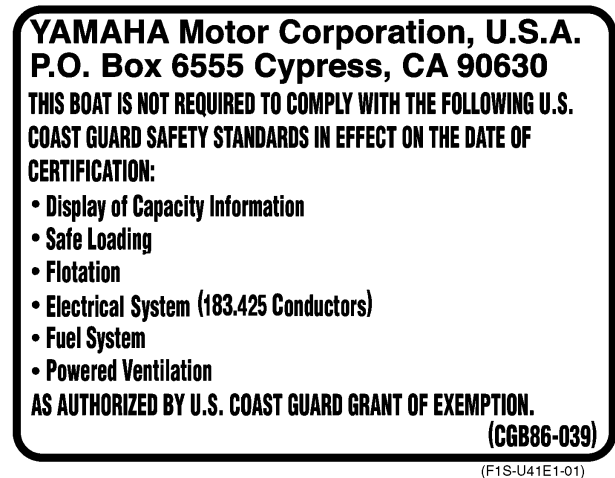
10



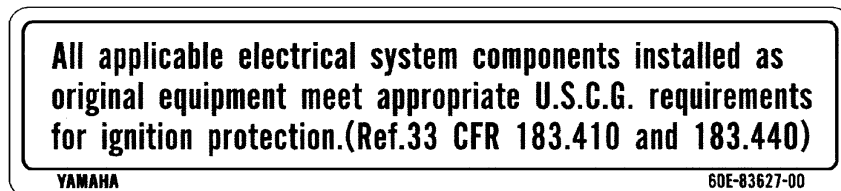
11



12



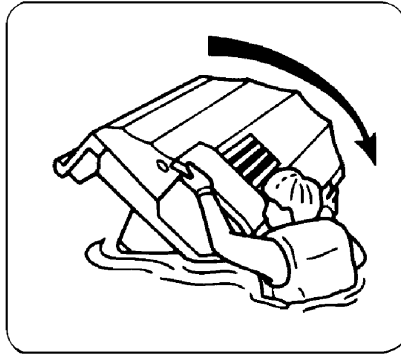
13



General and important labels

The following label indicates the correct direction to upright a capsized watercraft.

14



F1G-U418F-00

EJU30670

The safe use and operation of this watercraft is dependent upon the use of proper riding techniques, as well as upon the common sense, good judgment, and expertise of the operator. Every operator should know the following requirements before riding the watercraft.

- Before operating the watercraft, read this owner's/operator's manual, the Riding Practice Guide, the Riding Instruction card, and all warning and caution labels on the watercraft. Also, watch the Basic Orientation Video provided with your watercraft. These materials should give you an understanding of the watercraft and its operation.
- Never allow anyone to operate this watercraft until they too have read this owner's/operator's manual, the Riding Practice Guide, the Riding Instruction card, and all warning and caution labels, and, if possible, watched the Basic Orientation Video. Showing them the video may help reinforce the information contained in these materials.

EJU30730

Limitations on who may operate the watercraft

- Yamaha recommends a minimum operator age of 16 years old.
Adults must supervise use by minors. Know the operator age and training requirements for your state. A boating safety course is recommended and may be required in your state. You can find local rules by contacting the United States Coast Guard (USCG), the National Association of State Boating Law Administrators, or your local Power Squadron.
- This watercraft is designed to carry the operator and up to 2 passengers. Never exceed the maximum load limit or allow more than 3 persons (or 2 persons if a water-skier is being pulled) to ride the watercraft at any time.



Maximum load:
240 kg (530 lb)
Load is the total weight of cargo, operator, and passengers.

- Do not operate the watercraft with any passengers on board until you have considerable practice and experience riding alone. Operating the watercraft with passengers requires more skill. Take the time to become accustomed to the handling charac-

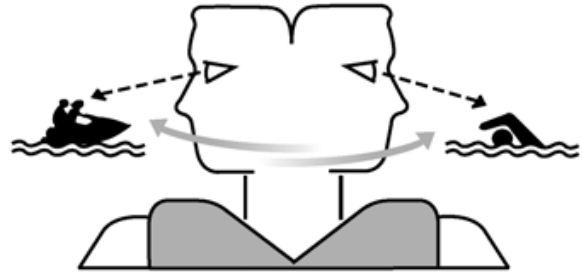
Safety information

teristics of the watercraft before trying any difficult maneuvers.

EJU30760

Cruising limitations

- Scan constantly for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.

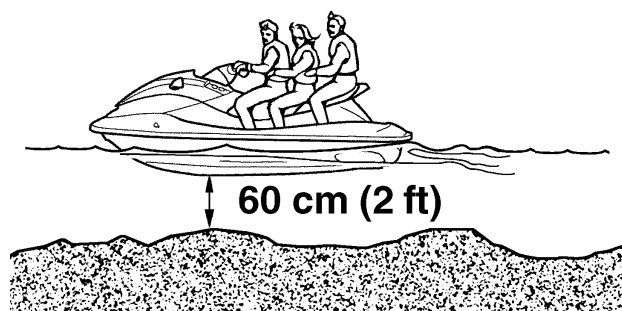


- Operate defensively at safe speeds and keep a safe distance away from people, objects, and other watercraft.
- Do not follow directly behind watercraft or other boats.
- Do not go near others to spray or splash them with water.
- Avoid sharp turns or other maneuvers that make it hard for others to avoid you or understand where you are going.
- Avoid areas with submerged objects or shallow water.
- Take early action to avoid collisions. Remember, watercraft and other boats do not have brakes.
- Do not release the throttle lever when trying to steer away from objects—you need throttle to steer. Always check throttle and steering controls before starting the watercraft.
- Ride within your limits and avoid aggressive maneuvers to reduce the risk of loss of control, ejection, and collision.
- This is a high performance boat—not a toy. Sharp turns or jumping wakes or waves can increase the risk of back/spinal injury (paralysis), facial injuries, and broken legs, an-

Safety information

kles, and other bones. Do not jump wakes or waves.

- Do not operate the watercraft in rough water, bad weather, or when visibility is poor; this may lead to an accident causing injury or death. Be alert to the possibility of adverse weather. Take note of weather forecasts and the prevailing weather conditions before setting out on your watercraft.
- As with any water sport, you should not operate your watercraft without someone else nearby. If you operate further than swimming distance from shore, you should be accompanied by another boat or watercraft, but make sure you stay a safe distance away. It's good, common sense!
- Never operate in water that is less than 60 cm (2 ft) deep, otherwise you increase your chance of hitting a submerged object, which could result in injury.



- This watercraft is not equipped with lighting required for night operation. Do not operate the watercraft after sunset or before dawn, otherwise you increase the risk of colliding

with another boat, which could result in severe injury or death.



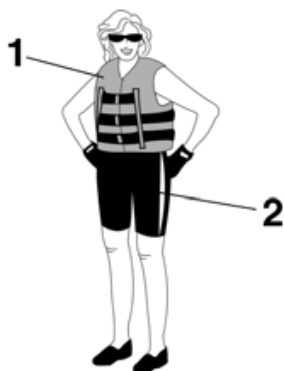
- Follow navigation rules, and state/provincial and local laws that apply to watercraft.

Safety information

EJU30811

Operation requirements

- All riders must wear a U.S. Coast Guard (USCG) approved personal flotation device (PFD) that is suitable for personal watercraft use.
- Wear protective clothing. Severe internal injuries can occur if water is forced into body cavities as a result of falling into the water or being near the jet thrust nozzle. Normal swimwear does not adequately protect against forceful water entry into the rectum or vagina. All riders must wear a wetsuit bottom or clothing that provides equivalent protection. Such clothing includes thick, tightly woven, sturdy and snug-fitting apparel such as denim, but does not include spandex or similar fabrics, like those used in bicycle shorts.



1 USCG approved PFD

2 Wetsuit bottom

- Eye protection is recommended to keep wind, water, and glare from the sun out of your eyes while you operate your watercraft. Restraining straps for eyewear are made which are designed to float should your eyewear fall in the water. Footwear and gloves are recommended.
- Helmets meeting Snell or DOT standards are required for IJSBA-sanctioned races. You must decide whether to wear a helmet while you ride for recreation. You should

know that a helmet could help protect you in certain kinds of accidents and that it could injure you in others.

A helmet is designed to provide some head protection. Although helmets cannot protect against all foreseeable impacts, a helmet might reduce your injuries in a collision with a boat or other obstacle.

A helmet may have potential safety hazards, as well. Falling into the water could risk the chance of the helmet catching water, commonly known as “bucketing”, and the resulting strain on your neck could cause choking, severe and permanent neck injuries, or death. A helmet could also increase the risk of an accident if it reduces your vision or hearing, or if it distracts you or increases your fatigue.

How should you decide if a helmet’s potential safety benefits outweigh its potential risks for you? Consider your particular riding conditions. Consider factors such as your riding environment and your riding style and ability. Also consider the likelihood of traffic congestion, and the water surface conditions.

If you decide to wear a helmet based upon your riding circumstances, choose one carefully. Look for a helmet designed for personal watercraft use, if possible. Consider a helmet meeting Snell or DOT standards. If you will be engaging in closed-course competition, follow the helmet requirements of the sanctioning organization.

Safety information

- NEVER operate the watercraft after consuming alcohol or taking other drugs.

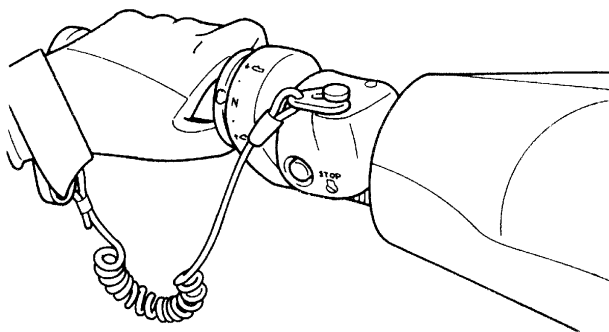


- For reasons of safety and proper care of the watercraft, always perform the pre-operation checks listed on page 55 before operating the watercraft.
- The operator and passengers should always keep their feet on the floor of the footwell when the watercraft is in motion. Lifting your feet increases the chances of losing your balance, or hitting objects outside the watercraft with your feet. Do not give a ride to children if their feet cannot reach the floor of the footwell.
- The passengers should hold on firmly, either to the person in front of them or to the handgrip provided.



- Never allow a passenger to ride in front of the operator.

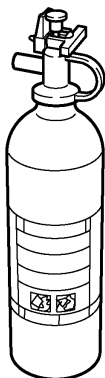
- Always consult your doctor on whether it is safe for you to ride this watercraft if you are pregnant or in poor health.
- Do not attempt to modify this watercraft! Modifications to your watercraft may reduce safety and reliability, and render the watercraft unsafe or illegal for use.
- Attach the engine shut-off cord to your left wrist and keep it free from the handlebars so that the engine stops if you, the operator, fall off. After riding, remove the engine shut-off cord from the watercraft to avoid accidental starting or unauthorized use by children or others.



- Scan carefully for swimmers and stay away from swimming areas. Swimmers are hard to see and you could accidentally hit someone in the water.
- Avoid being hit by another boat! You should always take the responsibility to watch for traffic; other boaters may not be watching for you. If they do not see you, or if you maneuver more quickly than other boaters expect, you risk a collision.
- Maintain a safe distance from other boats and watercraft, and also watch for ski ropes or fishing lines. Obey the "Rules of the Road" and be sure to check behind you before making a turn. (See "Rules of the Road" on page 18.)

Safety information

- According to the USCG, boats under 6.1 m (20 ft) in length like your watercraft **MUST** carry a fire extinguisher of a B-1 classification, with a capacity of two pounds or more when navigating in waters under USCG jurisdiction. In addition, most state and local boating laws also require that the fire extinguisher be approved by the USCG.



EJU30830

Recommended equipment

The following items should be carried on board your watercraft:

- Sound-signaling device
You should carry a whistle or other sound-signaling device that can be used to signal other boats. See “Rules of the Road” for more information.
- Visual distress signals
It is recommended that a U.S. Coast Guard approved pyrotechnic device be stored in a waterproof container on your watercraft. A mirror can also be used as an emergency signal. Contact a Yamaha dealer or the U.S. Coast Guard for more information.
- Watch
A watch is helpful so you will know how long you have been operating the watercraft.
- Towline
A towline can be used to tow a disabled watercraft in an emergency.

EJU30870

Hazard information

- Never start the engine or let it run for any length of time in an enclosed area. Exhaust fumes contain carbon monoxide, a colorless, odorless gas that may cause loss of consciousness and death within a short time. Always operate the watercraft in an open area.
- Do not touch the hot oil tank, muffler, or engine during or immediately after engine operation; they can cause serious burns.

EJU30920

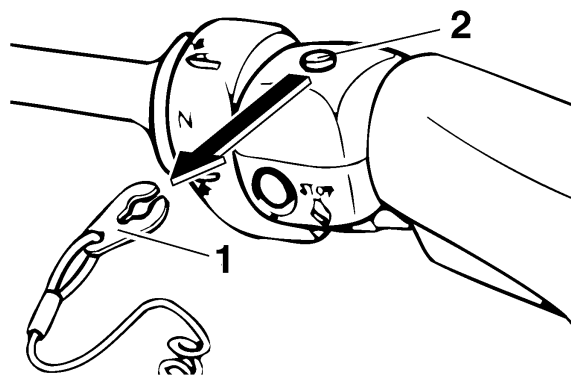
Watercraft characteristics

- Jet thrust turns the watercraft. Releasing the throttle lever completely produces only minimum thrust. If you are traveling at speeds above trolling, you will have rapidly decreasing ability to steer without throttle. This model is equipped with the Yamaha Engine Management System (YEMS) that includes an off-throttle steering (OTS) system. It will activate at planing speeds should you attempt to steer the watercraft after releasing the throttle lever. The OTS system assists in turning by continuing to supply some thrust while the watercraft is decelerating, but you can turn more sharply if you apply throttle while turning the handlebars. The OTS system does not function below planing speeds or when the engine is off. Once the engine slows down, the watercraft will no longer turn in response to handlebar input until you apply throttle again or you reach trolling speed.
Practice turning in an open area without obstacles until you have a good feel for this maneuver.
- This watercraft is water-jet propelled. The jet pump is directly connected to the engine. This means that jet thrust will produce some movement whenever the engine is running. There is no “neutral” position. You are in either “forward” or “reverse”, depending upon the shift lever position.
- Do not use the reverse function to slow down or stop the watercraft as it could cause you to lose control, be ejected, or impact the handlebars.
This could increase the risk of back/spinal injury (paralysis), facial injuries, and broken legs, ankles, and other bones. You could also damage the shift mechanism.

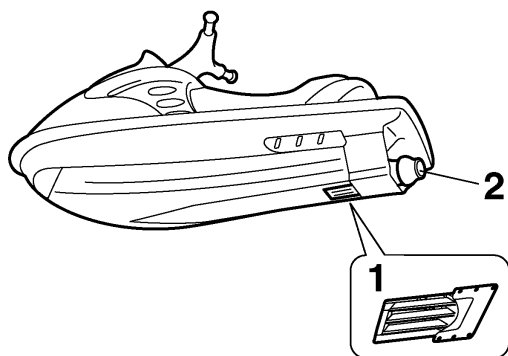
Safety information

- Reverse can be used to slow down or stop during slow-speed maneuvering, such as when docking. Once the engine is idling, shift into reverse and gradually increase engine speed. Make sure that there are no obstacles or people behind you before shifting into reverse.
- Keep away from the intake grate while the engine is on. Items such as long hair, loose clothing, or PFD straps can become entangled in moving parts, resulting in severe injury or drowning.
- Never insert any object into the jet thrust nozzle while the engine is running. Severe injury or death could result from coming in contact with the rotating parts of the jet pump.

any debris or weeds, which may have collected around the jet intake.



- 1 Clip
- 2 Engine shut-off switch



- 1 Intake grate
- 2 Jet thrust nozzle

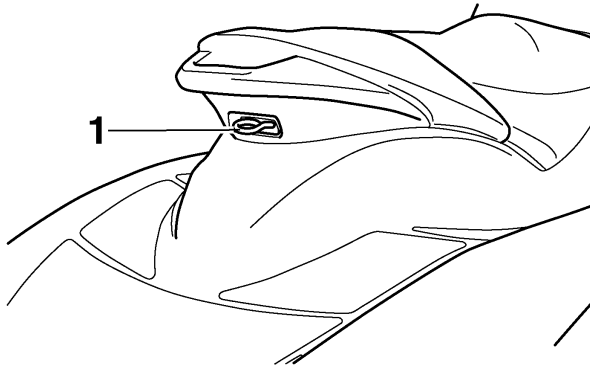
- Stop the engine and remove the clip from the engine shut-off switch before removing

EJU30940

Water-skiing

You can use the watercraft for water-skiing if it has the seating capacity to carry the operator, a rearward-facing spotter, and the water-skier when he or she is not skiing.

The watercraft must also have a cleat designed to pull a ski rope; do not attach the rope to any other location.



1 Cleat

It is the watercraft operator's responsibility to be alert to the safety of the water-skier and others. Know and follow all state and local water-skiing regulations in effect for the waters in which you will be operating.

The operator should be comfortable carrying passengers before attempting to pull a skier. The following are some important considerations for minimizing risks while water-skiing.

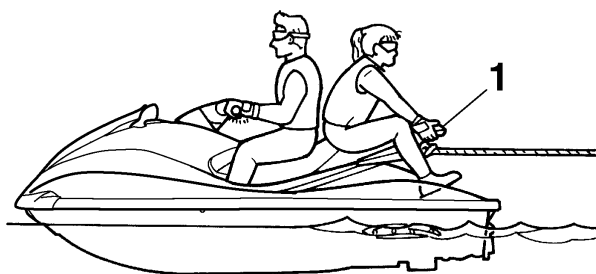
- The skier should wear an approved PFD, preferably a brightly colored one so boat operators can see the skier.
- The skier should wear protective clothing. Severe internal injuries can occur if water is forced into body cavities as a result of falling into the water. Normal swimwear does not adequately protect against forceful water entry into the rectum or vagina. The skier should wear a wetsuit bottom or clothing that provides equivalent protection.
- A second person should be on board as a spotter to watch the skier; in most states it

is required by law. Let the skier direct the operator's control of speed and direction with hand signals.

The spotter should sit astride the rear of the seat and hold onto the handgrip with both feet firmly on the floor of the footwell for proper balance while facing to the rear to

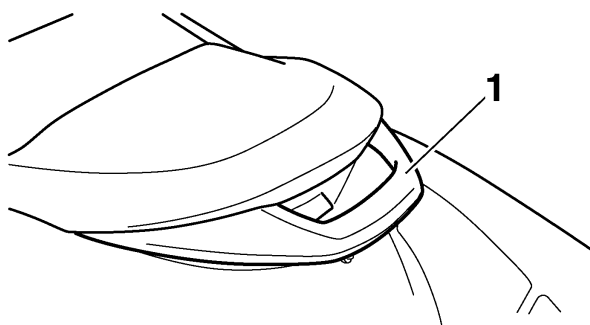
Safety information

watch the skier's hand signals and condition.



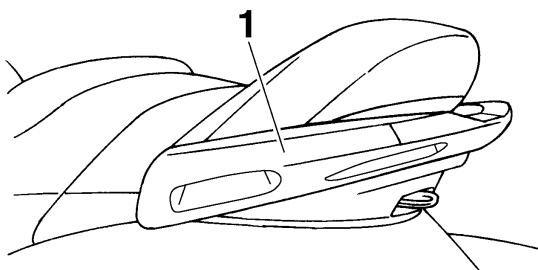
1 Handgrip

FX High Output



1 Handgrip

FX Cruiser High Output



1 Handgrip

- Your control while pulling a water-skier is affected by the skier's ability, as well as water and weather conditions.
- When preparing to pull a skier, operate the watercraft at the slowest possible speed

until the watercraft is well away from the skier and slack in the ski rope is taken up. Make sure that the rope is not looped around anything.

After checking that the skier is ready and that there is no traffic or other obstacles, apply enough throttle to raise the skier.

- Make smooth, wide turns. The watercraft is capable of very sharp turns, which could exceed the abilities of the skier. Keep the skier at least 50 m (150 ft), about twice the distance of a standard ski rope, from any potential hazard.
- Be alert to the hazard of the ski rope handle snapping back at the watercraft when the skier falls or is unable to get up on the skis.
- Towing heavy or bulky objects other than skiers, such as another boat or watercraft, can cause loss of steering control and create a hazardous condition. If you must tow another boat in an emergency situation, operate slowly and cautiously.

EJU30960

Rules of the Road

Your Yamaha watercraft is legally considered a powerboat. Operation of the watercraft must be in accordance with the rules and regulations governing the waterway on which it is used.

Just as there are rules that apply when you are driving on streets and highways, there are waterway rules that apply when you are operating your watercraft. These rules are used internationally, and are also enforced by the United States Coast Guard and local agencies. You should be aware of these rules, and follow them whenever you encounter another vessel on the water.

Several sets of rules prevail according to geographic location, but are all basically the same as the International Rules of the Road. The rules presented here in this owner's/operator's manual are condensed, and have been provided for your convenience only. Consult your local U.S. Coast Guard Auxiliary or Department of Motor Vehicles for a complete set of rules governing the waters in which you will be operating your watercraft.

Steering and sailing rules

Whenever two vessels on the water meet one another, one vessel has the right-of-way; it is called the "stand-on" vessel. The vessel that does not have the right-of-way is called the "give-way" or "burdened" vessel. These rules determine which vessel has the right-of-way, and what each vessel should do.

Stand-on vessel

The vessel with the right-of-way has the duty to continue its course and speed, except to avoid an immediate collision. When you maintain your direction and speed, the other vessel will be able to determine how best to avoid you.

Give-way vessel

The vessel which does not have the right-of-way has the duty to take positive and timely action to stay out of the way of the stand-on vessel. Normally, you should not cross in front of the vessel with the right-of-way. You should slow down or change directions briefly and pass behind the other vessel. You should always move in such a way that the operator of the other vessel can see what you are doing. The General Prudential Rule regarding the right-of-way is that if a collision appears unavoidable, neither boat has the right-of-way. Both boats must avoid the collision.

In other words, follow the standard rules except when a collision will occur unless both vessels try to avoid each other. If that is the case, both vessels become give-way vessels.

Rules when encountering vessels

There are three main situations that you may encounter with other vessels which could lead to a collision unless the Steering Rules are followed:

Meeting: you are approaching another vessel head-on

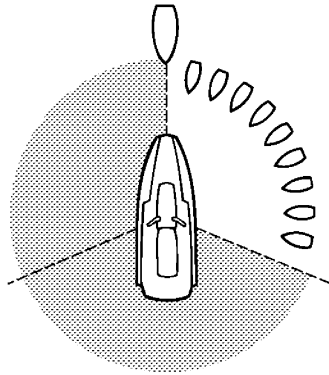
Crossing: you are traveling across another vessel's path

Overtaking: you are passing or being passed by another vessel

In the following illustration, your watercraft is in the center. You should give the right-of-way to any vessels shown in the white area (you are the give-way vessel). Any vessels in the shaded area must yield to you (they are the

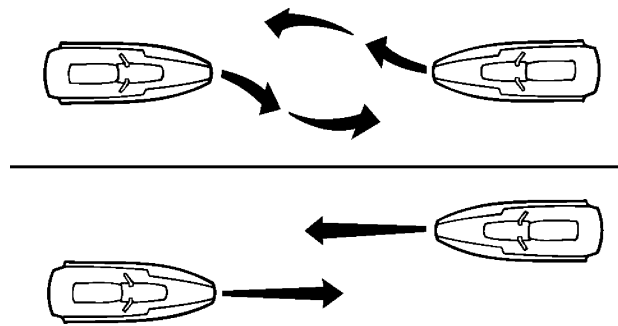
Safety information

give-way vessels). Both you and the meeting vessel must alter course to avoid each other.



Meeting

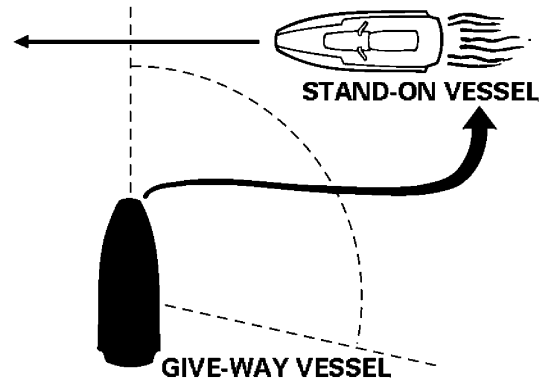
If you are meeting another power-driven vessel head on, and are close enough to run the risk of collision, neither of you has the right-of-way! Both of you should alter course to avoid an accident. You should keep the other vessel on your port (left) side. This rule does not apply if both of you will clear one another if you continue on your set course and speed.



Crossing

When two power-driven vessels are crossing each other's path close enough to run the risk of collision, the vessel which has the other on the starboard (right) side must keep out of the way of the other. If the other vessel is on your starboard (right) side, you must keep out of its way; you are the give-way vessel. If the other vessel is on your port (left) side, remember that you should maintain course and direction,

provided the other vessel gives you the right-of-way as it should.



Overtaking

If you are passing another vessel, you are the give-way vessel. This means that the other vessel is expected to maintain its course and speed. You must stay out of its way until you are clear of it. Likewise, if another vessel is passing you, you should maintain your speed and direction so that the other vessel can steer itself around you.

Other special situations

There are three other rules you should be aware of when riding your watercraft around other vessels.

Narrow channels and bends

When navigating in narrow channels, you should keep to the right when it is safe and practical to do so. If the operator of a power-driven vessel is preparing to go around a bend that may obstruct the view of other water vessels, the operator should sound a prolonged blast of four to six seconds on the whistle. If another vessel is around the bend, it too should sound the whistle. Even if no reply is heard, however, the vessel should still proceed around the bend with caution. If you navigate such waters with your watercraft, you will need to carry a portable air horn, available from local marine supply stores.

Fishing vessel right-of-way

All vessels fishing with nets, lines, or trawls are considered to be “fishing vessels” under the International Rules. Vessels with trolling lines are not considered fishing vessels. Fishing vessels have the right-of-way regardless of position. Fishing vessels cannot, however, impede the passage of other vessels in narrow channels.

Sailing vessel right-of-way

Sailing vessels should normally be given the right-of-way. The exceptions to this are:

- (1) When the sailing vessel is overtaking the power-driven vessel, the power-driven vessel has the right-of-way.
- (2) Sailing vessels should keep clear of any fishing vessel.
- (3) In a narrow channel, a sailing vessel should not hamper the safe passage of a power-driven vessel that can navigate only in such a channel.

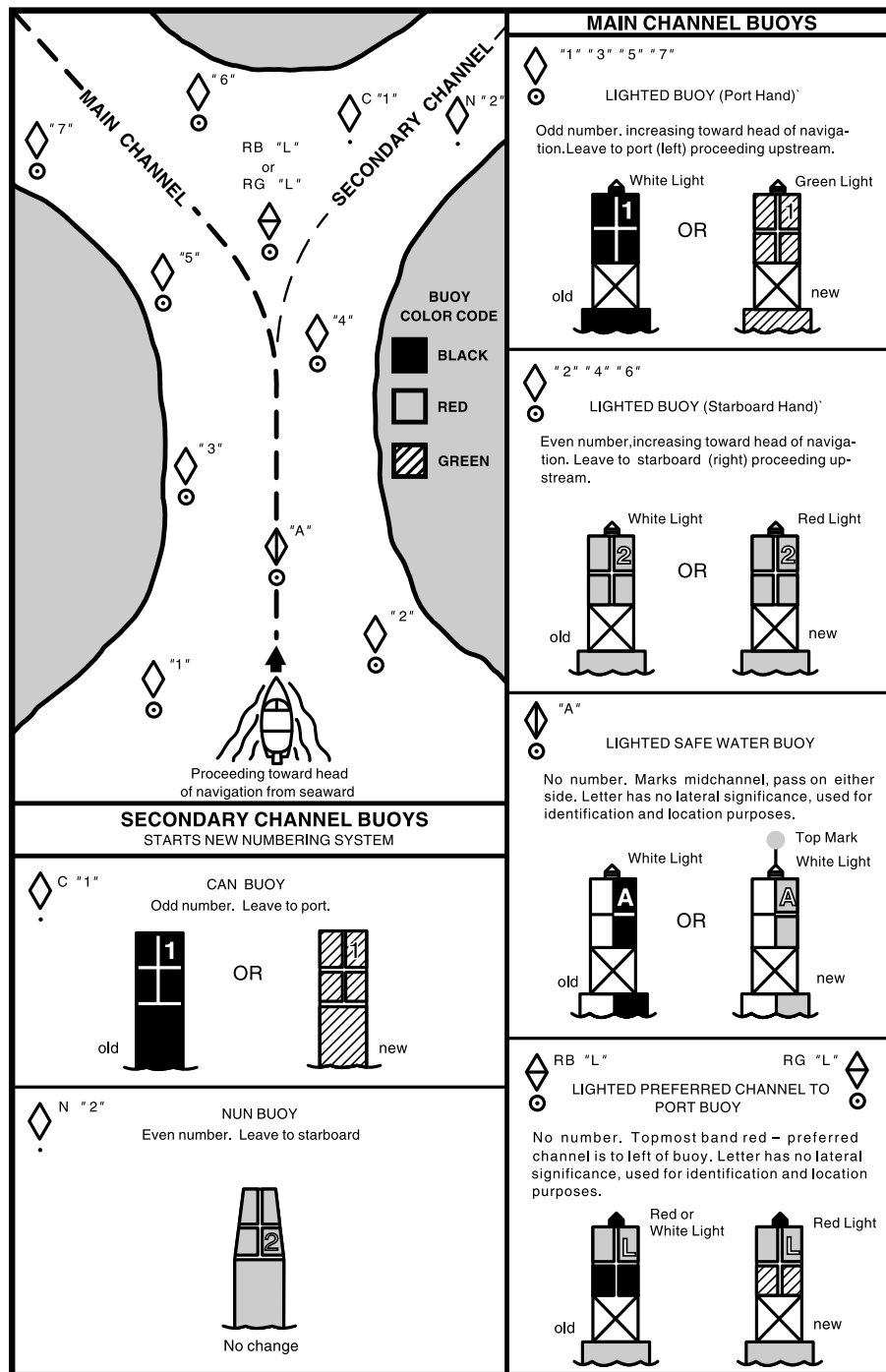
Reading buoys and other markers

The waters of the United States are marked for safe navigation by the lateral system of buoyage. Simply put, buoys and markers have an arrangement of shapes, colors, numbers, and lights to show which side of the buoy a boater should pass on when navigating in a particular direction. The markings on these buoys are oriented from the perspective of being entered from seaward (the boater is going towards the harbor). Red buoys are passed on your starboard (right) side when proceeding from open water into the harbor, and black buoys are to your port (left) side. An easy way to remember the meaning of the colors is the phrase “red right returning”. When navigating out of the harbor, your position with respect to the buoys should be reversed; red buoys should be to port and black buoys to starboard.

Many bodies of water used by boaters are entirely within the boundaries of a particular state. The Uniform State Waterway Marking System has been devised for these waters. This system uses buoys and signs with distinctive shapes and colors to show regulatory or advisory information. These markers are white with black letters and orange borders.

Safety information

They signify speed zones, restricted areas, danger areas, and general information.



Remember, markings may vary by geographic location. Always consult local boating authorities before riding your watercraft in unfamiliar waters.

EJU30980

To get more boating safety information

Be informed about boating safety. Additional publications and information can be obtained from many organizations, including the following.

United States Coast Guard

Consumer Affairs Staff (G-BC)

Office of Boating, Public, and Consumer Affairs

U.S. Coast Guard Headquarters

Washington, D.C. 20593-0001

Boating Safety Hotline: 1-800-368-5647

Other sources

You can find local rules by contacting the National Association of State Boating Law Administrators, or your local Power Squadron.

Watercraft Education and Training

The Online Boating Safety Course, available through the watercraft section of the yamaha-motor.com website, is a free, 50 question learning course available to the public. Upon successful completion of 80 percent or better, the user can request a certificate of completion by mail or can download one immediately. The Online Boating Safety Course, provided by the Boat/US Foundation, is approved by the National Association of State Boating Law Administrators (NASBLA) and recognized by the United States Coast Guard. This course meets the education requirement for those states that recognize non-proctored, NASBLA-approved courses.

Yamaha is the watercraft industry's leading manufacturer to build awareness and support for boating education. In 1997, Yamaha launched its GET W.E.T. (Watercraft Education and Training) initiative and has since reached out to over one million Americans promoting the benefits of boating education.

The Online Boating Safety Course:
<http://www.boatus.com/onlinecourse/>

Safety information

EJU30990

Enjoy your watercraft responsibly

You share the areas you enjoy when riding your watercraft with others and with nature. So your enjoyment includes a responsibility to treat these other people, and the lands, waters, and wildlife with respect and courtesy. Whenever and wherever you ride, think of yourself as the guest of those around you. Remember, for example, that the sound of your watercraft may be music to you, but it could be just noise to others. And the exciting splash of your wake can make waves others won't enjoy.

Avoid riding close to shoreline homes and waterfowl nesting areas or other wildlife areas, and keep a respectful distance from fishermen, other boats, swimmers, and populated beaches. When travel in areas like these is unavoidable, ride slowly and obey all laws.

Proper maintenance is necessary to ensure that the exhaust emission and sound levels of your watercraft will continue to be within regulated limits. You have the responsibility to make sure that the recommended maintenance in this owner's/operator's manual is carried out.

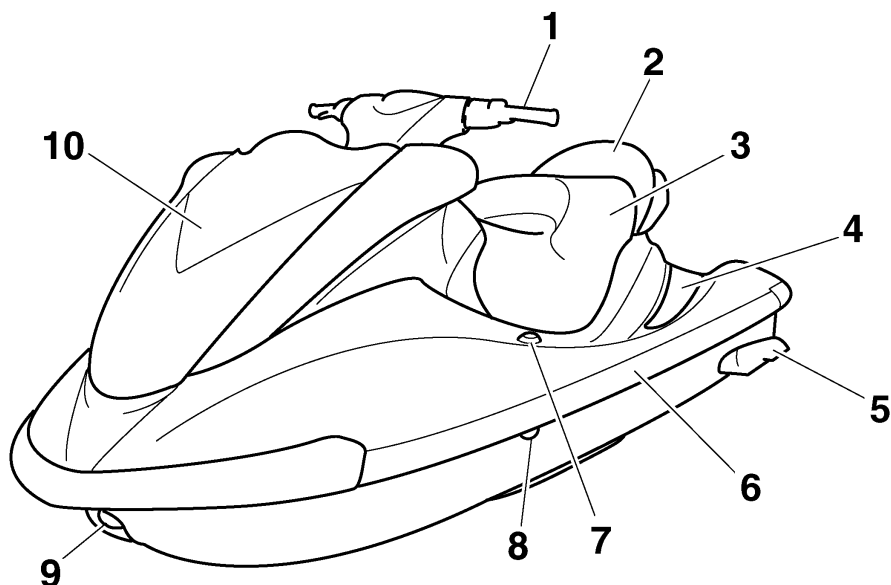
Remember, pollution can be harmful to the environment. Do not refuel or add oil where a spill could cause damage to nature. Remove your watercraft from the water and move it away from the shoreline before refueling. And keep your surroundings pleasant for the people and wildlife that share the waterways: don't litter!

When you ride responsibly, with respect and courtesy for others, you help ensure that our waterways stay open for the enjoyment of a variety of recreational opportunities.

EJU31010

Location of main components

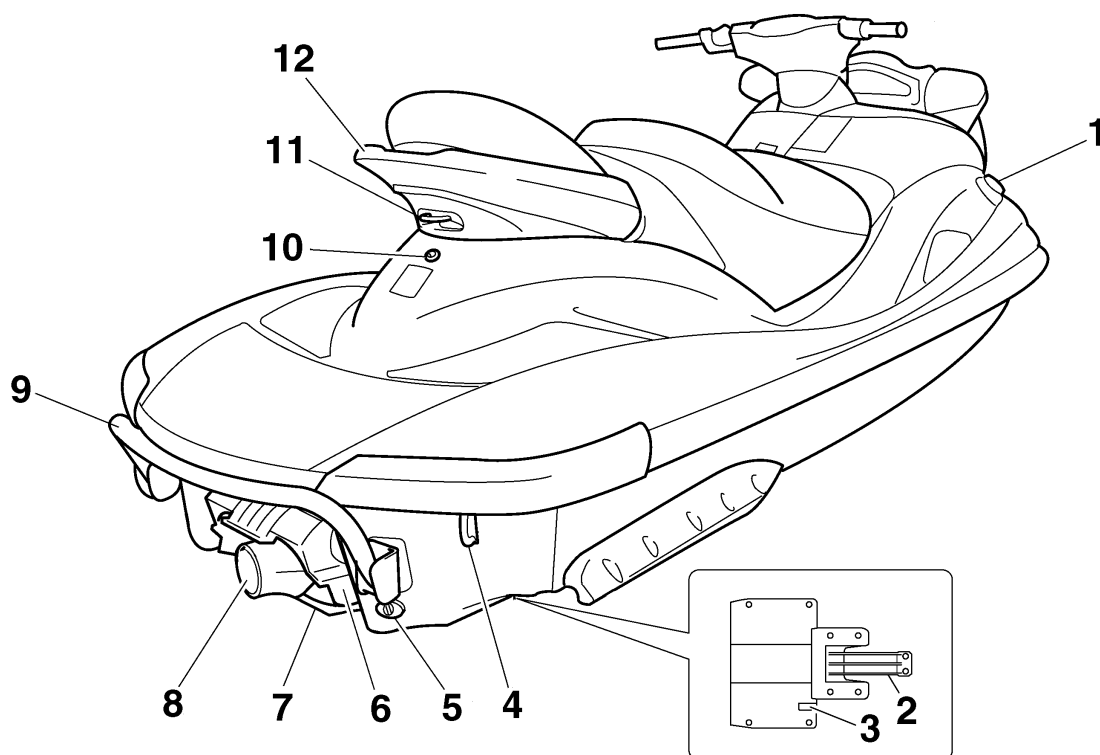
Front view



- 1 Handlebars
- 2 Rear seat
- 3 Front seat
- 4 Footwell
- 5 Sponsons
- 6 Gunwale
- 7 Pull-up cleat (for FX Cruiser High Output)
- 8 Cooling water pilot outlet
- 9 Bow eye
- 10 Hood

Features and functions

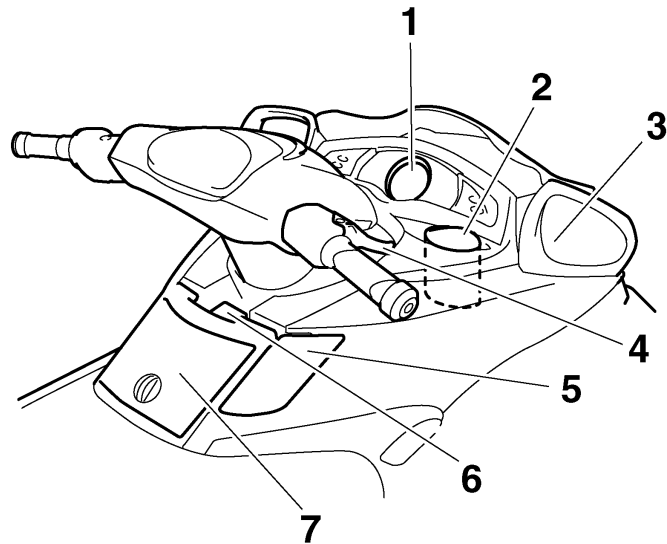
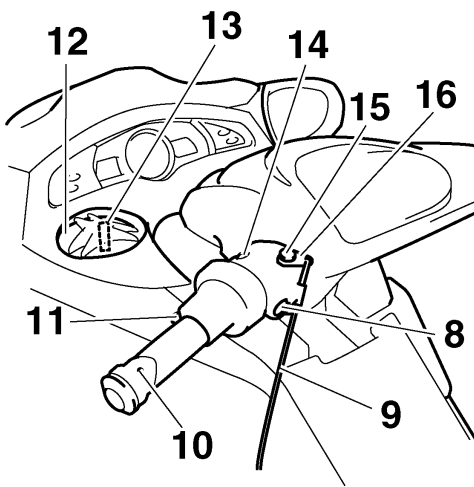
Rear view



- 1 Fuel tank filler cap
- 2 Intake grate
- 3 Speed sensor
- 4 Stern eyes
- 5 Stern drain plugs
- 6 Reverse gate
- 7 Ride plate
- 8 Jet thrust nozzle
- 9 Reboarding step
- 10 Electric bilge pilot outlet
- 11 Cleat
- 12 Handgrip

Features and functions

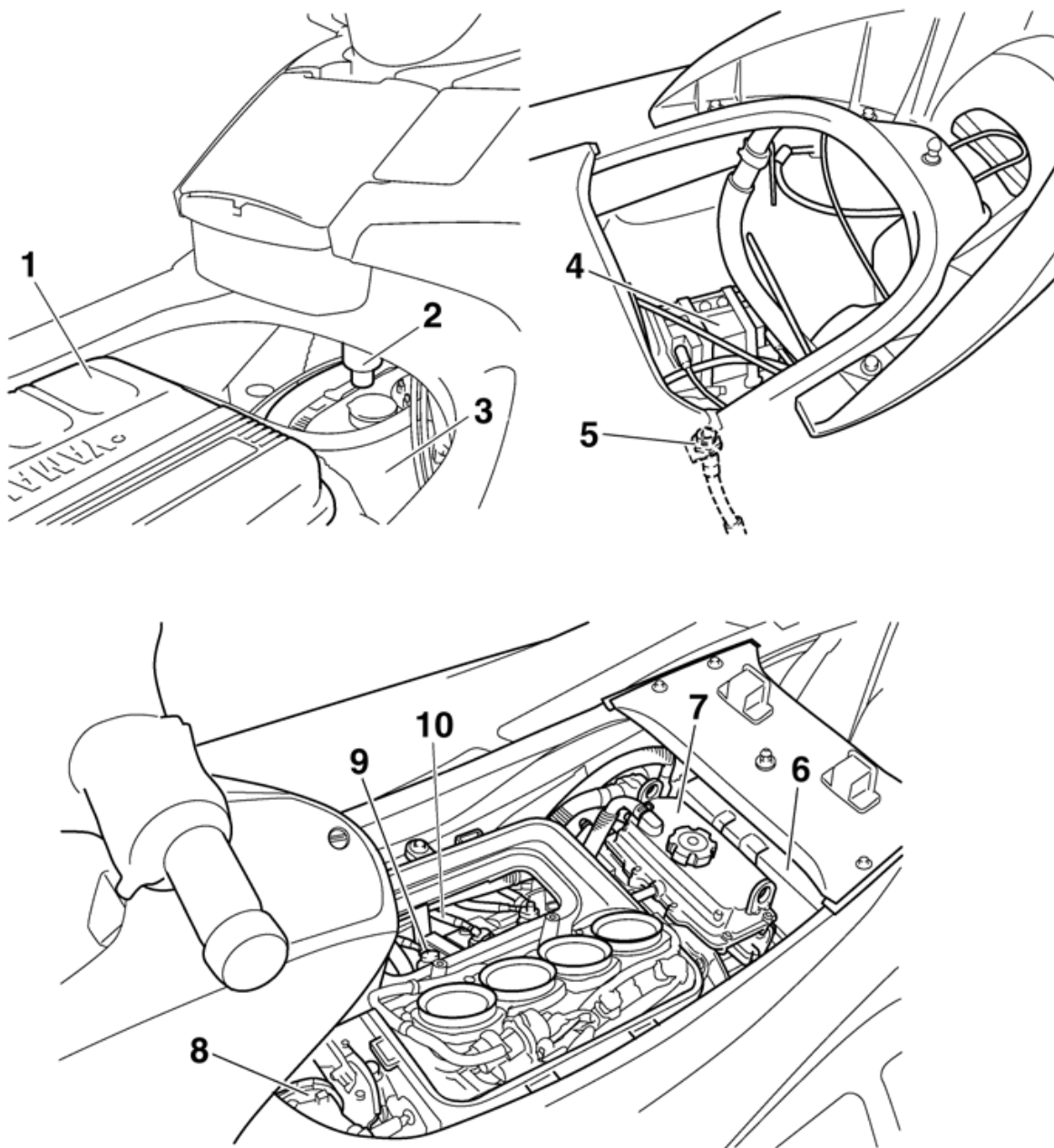
Control system



- 1 Multifunction information center
- 2 Beverage holder
- 3 Rearview mirrors
- 4 Throttle lever
- 5 Shift lever
- 6 Tilt lever
- 7 Glove compartment
- 8 Engine stop switch
- 9 Engine shut-off cord (lanyard)
- 10 Quick Shift Trim System (QSTS) selector
- 11 QSTS selector lock lever
- 12 Watertight compartment
- 13 Remote control transmitter
- 14 Start switch
- 15 Engine shut-off switch
- 16 Clip

Features and functions

Engine compartment



- 1 Air filter case
- 2 Water separator
- 3 Fuel tank
- 4 Battery
- 5 Flushing hose connector
- 6 Electrical box
- 7 Oil tank
- 8 Muffler
- 9 Spark plugs/Spark plug caps/ignition coils
- 10 Spark plug lead

Features and functions

EJU31020

Operation of controls and other functions

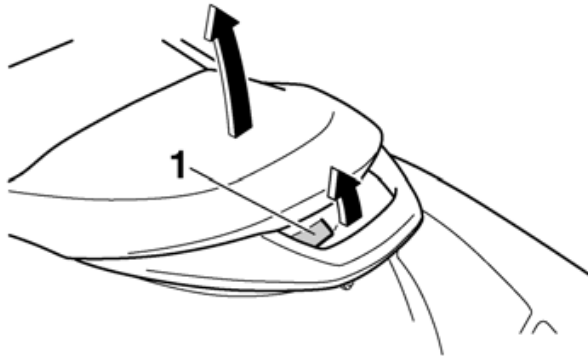
EJU31040

Seats

To remove the rear seat:

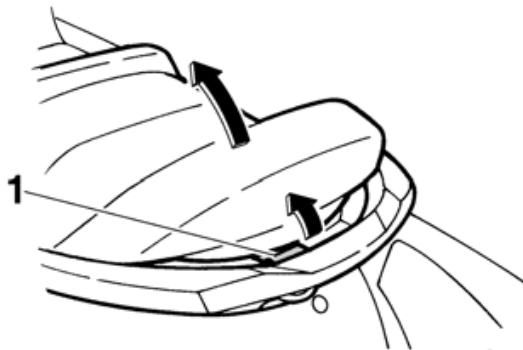
Pull the rear seat latch up, and then pull the seat off.

FX High Output



1 Seat latch

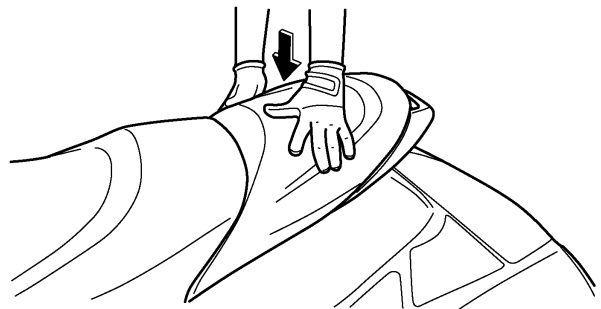
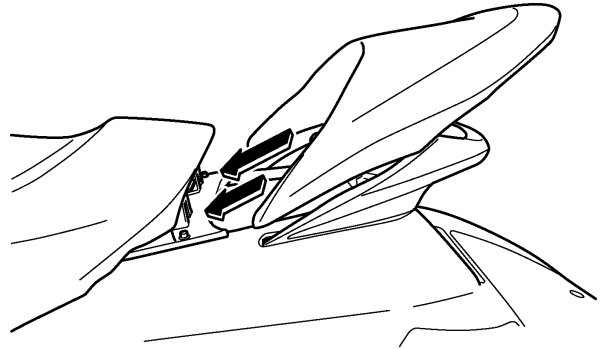
FX Cruiser High Output



1 Seat latch

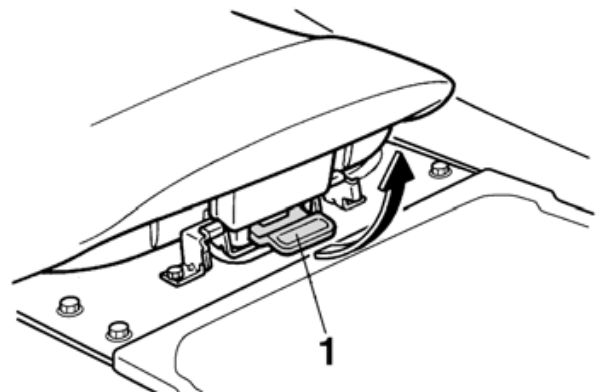
To install the rear seat:

Insert the projections on the front of the seat into the stays on the deck, and then push the rear of the seat down to lock it in place.



To remove the front seat:

- (1) Remove the rear seat.
- (2) Pull the front seat latch up, and then pull the seat off.

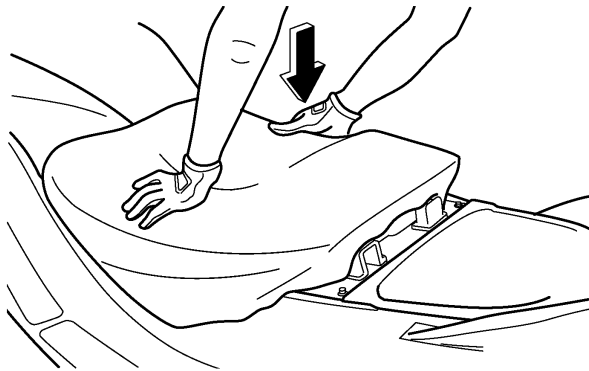
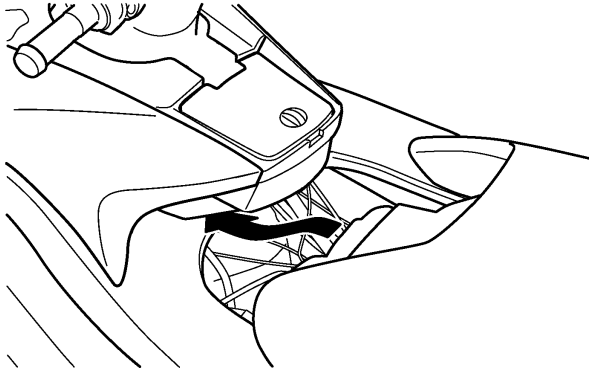


1 Seat latch

Features and functions

To install the front seat:

- (1) Insert the projections on the front of the seat into the stays on the deck, and then push the rear of the seat down to lock it in place.



- (2) Install the rear seat.

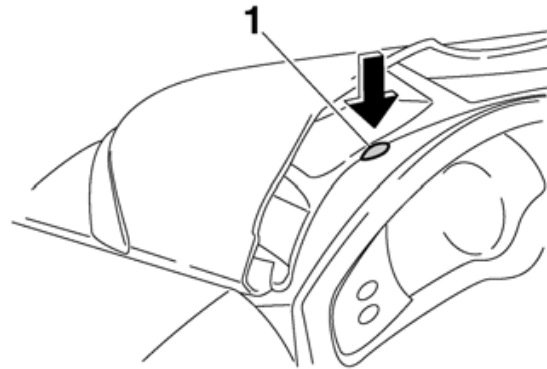
NOTE:

Make sure that the seats are securely installed before operating the watercraft.

EJU31061

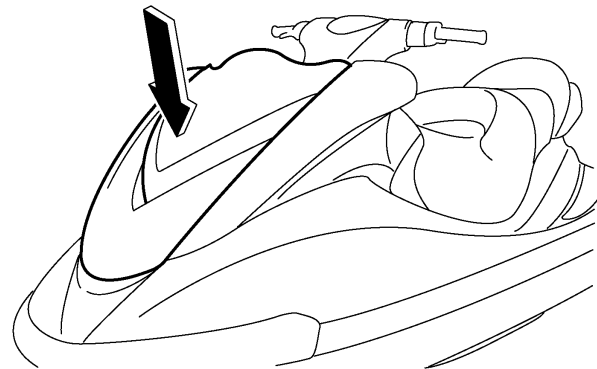
Hood

To open the hood, push the hood latch down, and then lift up the hood.



1 Hood latch

To close the hood, push the hood down to lock it in place.



NOTE:

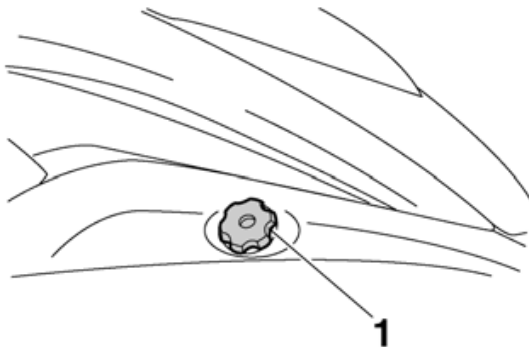
Make sure that the hood is securely closed before operating the watercraft.

Features and functions

EJU31090

Fuel tank filler cap

To remove the fuel tank filler cap, turn it counterclockwise.



1 Fuel tank filler cap

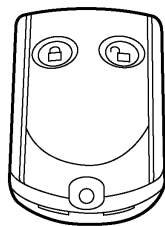
NOTE:

Make sure that the fuel tank filler cap is securely closed before operating the watercraft.

EJU34842

Remote control transmitter

The Yamaha Security System and low-RPM mode settings are selected using the remote control transmitter. (See “Yamaha Security System and low-RPM mode” on page 37 for information on using the remote control transmitter.)



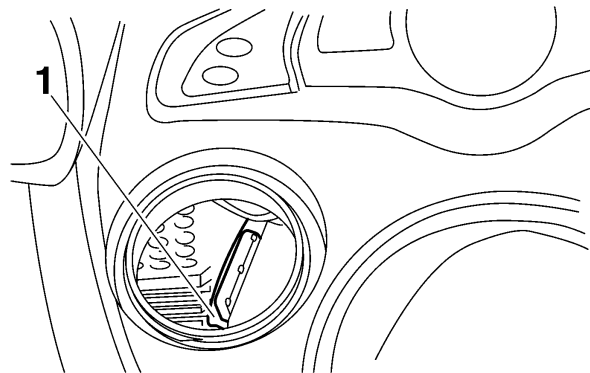
ECJ00750

CAUTION:

The Yamaha Security System and low-RPM mode settings can only be selected using the remote control transmitter. Ob-

serve the following precautions to protect your remote control transmitter:

- Store the remote control transmitter carefully so it will not be lost. When operating the watercraft, use the transmitter holder in the watertight compartment. If you accidentally lose your remote control transmitter, contact a Yamaha dealer.
- While the remote control transmitter has been designed for use in wet environments, it should not be operated underwater or submerged for an extended length of time. If it gets wet, dry it with a soft, dry cloth.
- Keep the remote control transmitter away from high temperatures and do not place it in direct sunlight.
- Do not drop the remote control transmitter, subject it to strong shocks, or place any heavy items on it.
- Use a soft, dry cloth to clean the transmitter. Do not use detergent, alcohol, or other chemicals.
- If the remote control transmitter needs a new battery or is not operating properly, contact a Yamaha dealer. Do not attempt to replace the battery yourself.



1 Transmitter holder

Features and functions

NOTE:

- While the engine is running, input from the remote control transmitter is not received.
- Refer to local hazardous waste regulations when disposing of transmitter batteries.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

ECJ00030

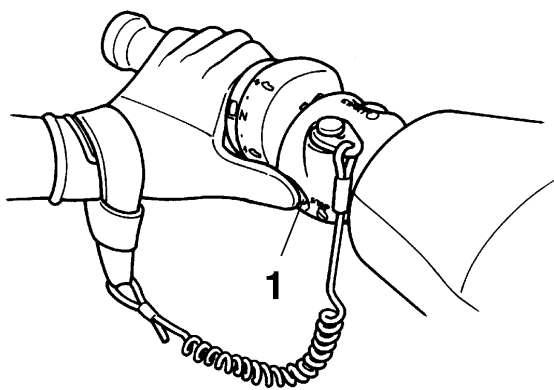
CAUTION:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the remote control transmitter.

EJU31150

Engine stop switch

Push the engine stop switch (red button) to stop the engine normally.



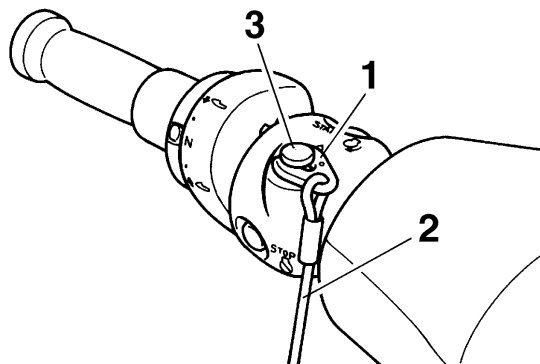
1 Engine stop switch

EJU31160

Engine shut-off switch

Insert the clip, on the end of the engine shut-off cord, under the engine shut-off switch (black button). The engine will stop automatically when the clip is removed from the

switch, such as if the operator falls off the watercraft.

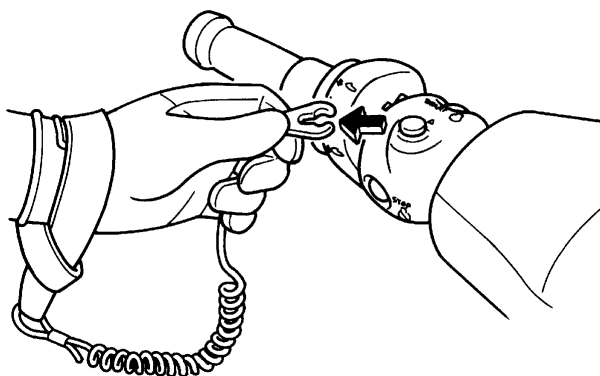


- 1 Clip
- 2 Engine shut-off cord
- 3 Engine shut-off switch

EWJ00010

WARNING

- Always attach the engine shut-off cord to your left wrist and the clip to the engine shut-off switch **BEFORE** starting the engine.
- To prevent accidental starting of the engine or unauthorized use by children or others, always remove the clip from the engine shut-off switch when the engine is not running.

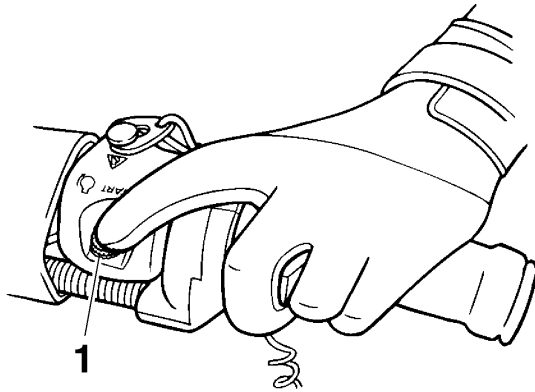


Features and functions

EJU36280

Start switch

Push the start switch (green button) to start the engine.



1 Start switch

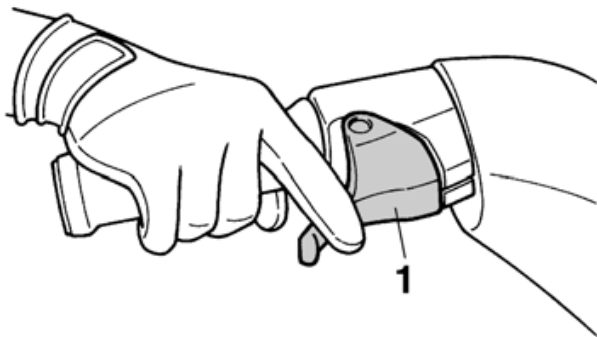
NOTE:

The engine will not start when the lock mode of the Yamaha Security System has been selected, the clip is removed from the engine shut-off switch, or the throttle lever is squeezed. (See page 38 for Yamaha Security System lock and unlock mode selection procedures.)

EJU31210

Throttle lever

Squeeze the throttle lever to increase engine speed.



1 Throttle lever

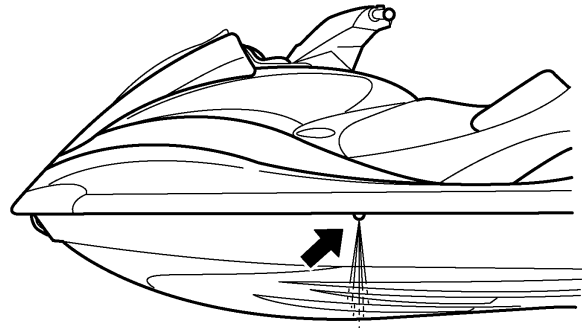
Release the throttle lever to decrease engine speed or to return it to the idle position.

EJU31241

Cooling water pilot outlets

This watercraft is equipped with cooling water pilot outlets.

When the engine is running, cooling water is circulated in the engine, and then it is discharged from the pilot outlets.



To check for proper operation of the cooling system, check that water is being discharged from the port (left) pilot outlet. If water is not being discharged from this outlet, cooling water may not be circulating in the engine. When this occurs, stop the engine and check for the cause. (See pages 44 and 98 for more information.)

NOTE:

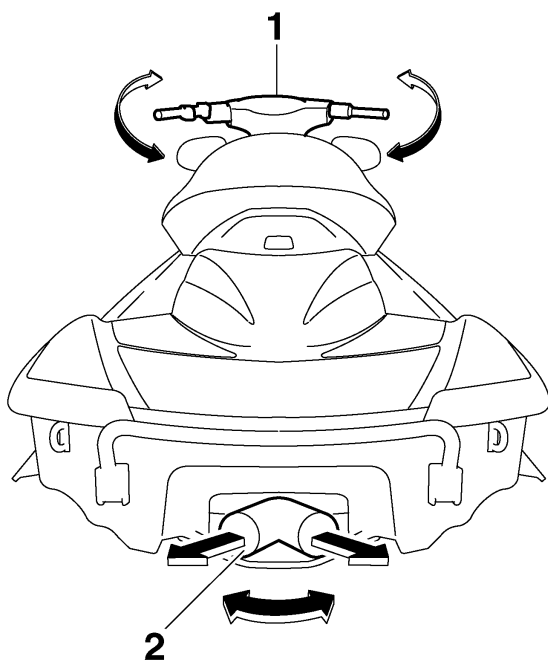
- If the cooling water passages are dry, it will take about 60 seconds for the water to reach the outlet after the engine is started.
- Water discharge may not be constant at idle, therefore, open the throttle a little to check that water discharges properly.
- Water discharge may not be constant at the starboard (right) pilot outlet, however, if it is constant at the port (left) pilot outlet, the cooling system is operating normally.

Features and functions

EJU31260

Steering system

Your watercraft can be steered by turning the handlebars in the direction you wish to travel.



- 1 Handlebar
- 2 Jet thrust nozzle

When the handlebars are turned, the angle of the jet thrust nozzle is changed, and the direction of the watercraft is changed accordingly. Since the strength of the jet thrust determines the speed and degree of a turn, throttle must always be applied when attempting a turn, except at trolling speed.

This model is equipped with the Yamaha Engine Management System (YEMS) that includes an off-throttle steering (OTS) system. It will activate at planing speeds should you attempt to steer the watercraft after releasing the throttle lever. The OTS system assists in turning by continuing to supply some thrust while the watercraft is decelerating, but you can turn more sharply if you apply throttle while turning the handlebars.

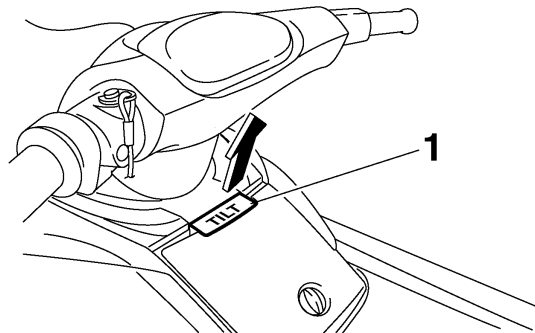
The OTS system does not function below planing speeds or when the engine is off.

Once the engine slows down, the watercraft will no longer turn in response to handlebar input until you apply throttle again or you reach trolling speed.

EJU31290

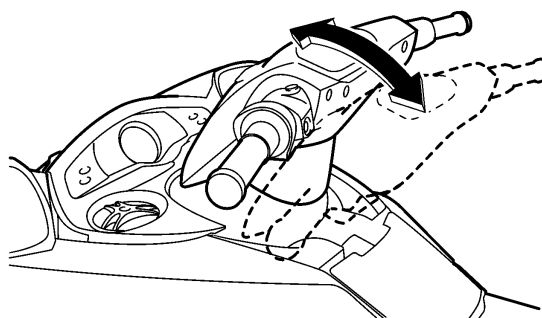
Tilt lever

The tilt lever is located in front of the glove compartment and is used to adjust the tilt of the handlebars.



1 Tilt lever

To adjust the tilt, pull the tilt lever up, and then move the handlebars up or down to the desired position.



EWJ00040

WARNING

- **Never touch the tilt lever during operation, otherwise the handlebars may suddenly change position, which may lead to an accident.**
- **Make sure that the tilt lever returns to its original position and that the handlebars are locked in place after adjusting them,**

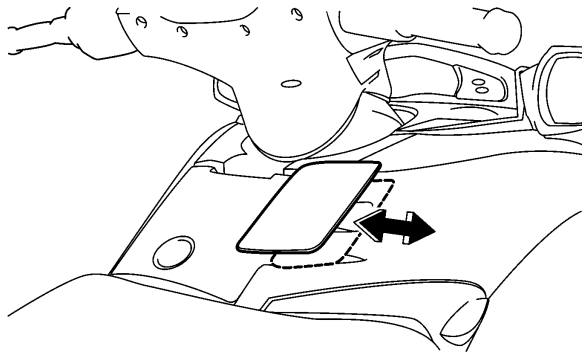
Features and functions

otherwise the handlebars may suddenly change position, which may lead to an accident.

EJU31300

Shift lever

The shift lever is located on the starboard (right) side of the watercraft and is used to control the reverse gate, which allows the watercraft to move in reverse or forward.



When the shift lever is in the reverse position, the watercraft can be launched from a trailer, or backed up out of tight spots where you cannot turn around easily.

To shift into reverse:

- (1) Release the throttle lever and let the engine speed return to idle.
- (2) Pull the shift lever toward you.

EWJ00030

WARNING

- Make sure that the throttle lever is completely released and that the engine is at idle before shifting into reverse.
- Do not use the reverse function to slow down or stop the watercraft as it could cause you to lose control, be ejected, or impact the handlebars.
- Use reverse for slow-speed maneuvering only.
- Make sure that there are no obstacles or people behind you before shifting into reverse.

- Do not touch the reverse gate while the shift lever is being operated, otherwise you could be pinched.

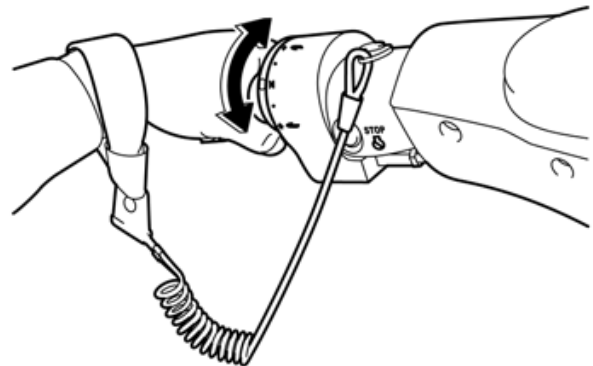
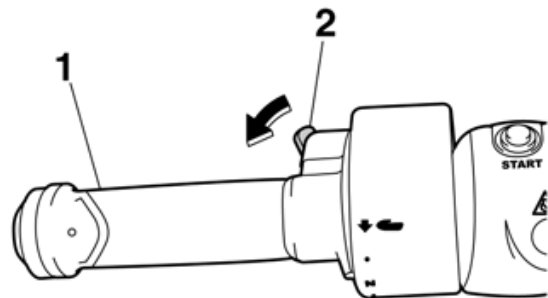
To shift into forward:

- (1) Release the throttle lever and let the engine speed return to idle.
- (2) Push the shift lever away from you.

EJU31321

Quick Shift Trim System (QSTS) selector

The QSTS selector is located at the left handlebar grip and is used to adjust the trim angle of the watercraft.

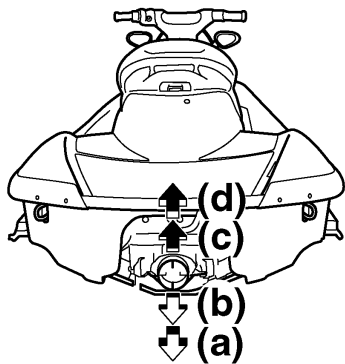
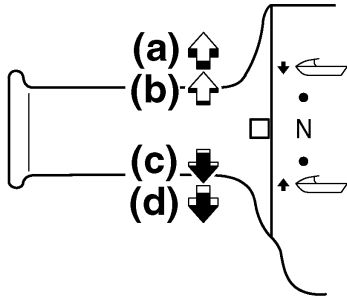


- 1 Quick Shift Trim System (QSTS) selector
- 2 QSTS selector lock lever

Operating the QSTS selector changes the angle of the jet thrust nozzle vertically. This changes the trim angle of the watercraft.

Features and functions

There are 5 positions: 2 bow-down positions (a) and (b), neutral “N”, and 2 bow-up positions (c) and (d).



To change the trim angle:

- (1) Reduce engine speed to less than 4000 r/min.
- (2) Squeeze the QSTS selector lock lever, and then turn the QSTS selector to the desired position.
- (3) Release the lock lever to lock the QSTS selector.

ECJ00980

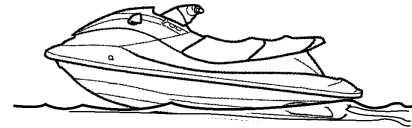
CAUTION:

Do not turn the QSTS selector while operating the watercraft at an engine speed of 4000 r/min or more, otherwise damage could occur to the QSTS.

The neutral “N” position will provide good performance for most operating conditions.

To enhance particular types of performance, select bow down or bow up.

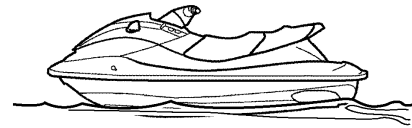
(d) ↑



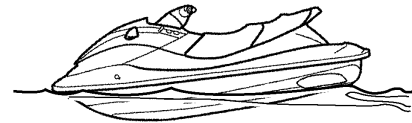
(c) ↑

N

(b) ↓



(a) ↓



EJU31330

Bow down

Turn the QSTS selector to (a) or (b) and the bow will go down while the watercraft is on plane.

Bow down puts more of the bow in the water. This gives the watercraft more “hook”, which enhances turning performance. This position will also help the watercraft get up on plane more quickly.

At higher speeds, however, the watercraft will have a greater tendency to “bow steer” and follow waves and wakes in the water. Fuel economy and maximum speed are also reduced.

EJU31340

Bow up

Turn the QSTS selector to (c) or (d) and the bow will go up while the watercraft is on plane. Bow up puts less of the bow in the water. There is less water resistance, so straight-

Features and functions

ahead acceleration when on plane and top speed are enhanced.

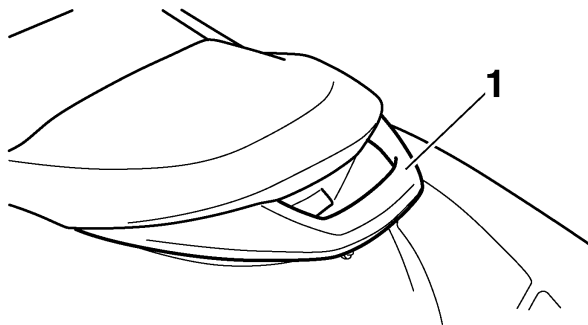
In some conditions, however, the watercraft may tend to “porpoise” (hop in the water). If the watercraft is porpoising, select neutral or bow down.

EJU31360

Handgrip

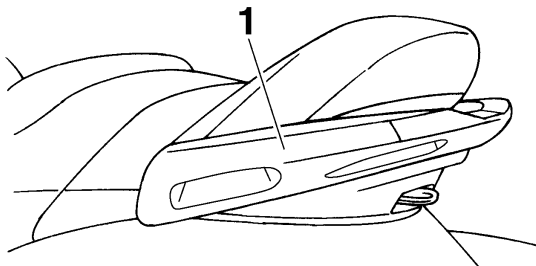
The handgrip provides a handhold for boarding the watercraft and for a spotter when facing rearward.

FX High Output



1 Handgrip

FX Cruiser High Output



1 Handgrip

EWJ00020

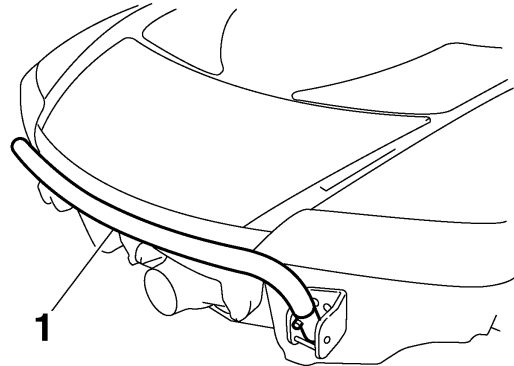
WARNING

Do not use the handgrip to lift the watercraft. The watercraft could fall, which could result in severe injury.

EJU34861

Reboarding step

The reboarding step provides a handhold and footstep for boarding the watercraft.



1 Reboarding step

EWJ01210

WARNING

Do not use the reboarding step to lift the watercraft. The watercraft could fall, which could result in severe injury.

ECJ00741

CAUTION:

Use the reboarding step only to board the watercraft in the water. Do not use the reboarding step as a footstep when the watercraft is on land, or for any other purpose. The watercraft can be damaged.

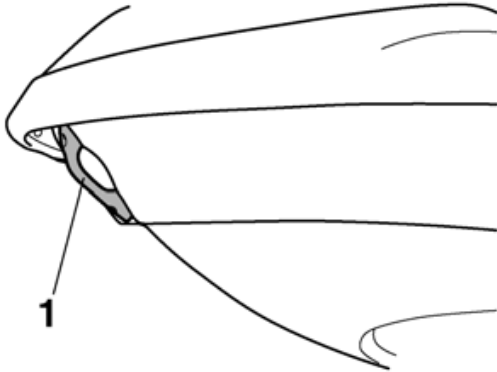
EJU34870

Bow eye

The bow eye is located at the bow of the watercraft.

Features and functions

The bow eye is used to attach a rope to the watercraft when transporting, mooring, or towing it in an emergency.



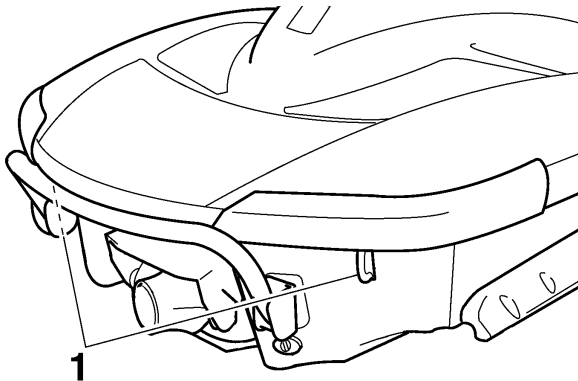
1 Bow eye

EJU34880

Stern eyes

The stern eyes are located at the stern of the watercraft.

The stern eyes are used to attach a rope to the watercraft when transporting or mooring it.



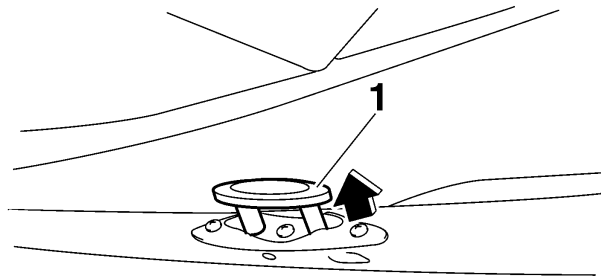
1 Stern eye

EJU34890

Pull-up cleats (for FX Cruiser High Output)

The pull-up cleats are used to attach a rope to the watercraft when mooring it.

To use a pull-up cleat, pull it up.



1 Pull-up cleat

EWJ00820

WARNING

Do not use the pull-up cleats to lift the watercraft. The watercraft could fall, which could result in severe injury.

EJU31370

Yamaha Engine Management System (YEMS)

This model is equipped with an integrated, computerized management system that controls and adjusts ignition timing, fuel injection, engine diagnostics, and the off-throttle steering (OTS) system.

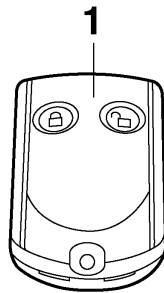
EJU31380

Yamaha Security System and low-RPM mode

This watercraft is equipped with a remote control transmitter that is used to select the security system and low-RPM mode settings. Since the watercraft is programmed to recognize the internal code from this transmitter only, the security system setting can only be changed with this transmitter. If you lose the

Features and functions

remote control transmitter or it does not operate properly, contact a Yamaha dealer.



1 Remote control transmitter

EJU31390

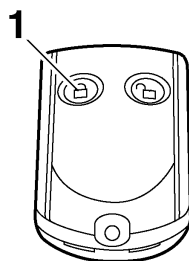
Yamaha Security System

The Yamaha Security System functions to help prevent unauthorized use or theft of the watercraft. The engine cannot be started if the security system is in the lock mode. The engine can only be started in the unlock mode.

EJU31400

Yamaha Security System lock and unlock modes

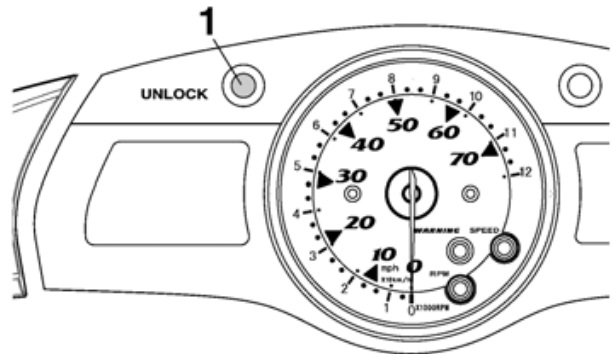
The lock and unlock modes of this system can only be selected while the engine is stopped. When the lock button on the remote control transmitter is pressed, the beeper sounds once. This indicates the lock mode is selected and the engine cannot be started.



1 Lock button

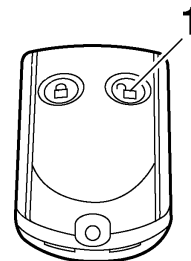
The “UNLOCK” indicator light comes on when the security system is in the unlock mode and

goes off when the security system is in the lock mode.



1 “UNLOCK” indicator light

When the unlock button on the remote control transmitter is pressed for a short time, the beeper sounds two times for the normal mode or three times for the low-RPM mode. The “UNLOCK” indicator light will come on and the engine can be started. (See the items in “Selecting the normal mode/low-RPM mode” for operation mode information.)



1 Unlock button

Number of beeps	Yamaha Security System mode	Engine can be started
1 beep	Lock	NO
2 beeps	Unlock (normal mode)	YES
3 beeps	Unlock (low-RPM mode)	YES

Features and functions

EJU36221

Selecting the normal mode/low-RPM mode

The normal mode and low-RPM mode can only be selected when the engine is stopped in the unlock mode. Press the unlock button on the remote control transmitter for more than 4 seconds to switch between the normal mode and the low-RPM mode.

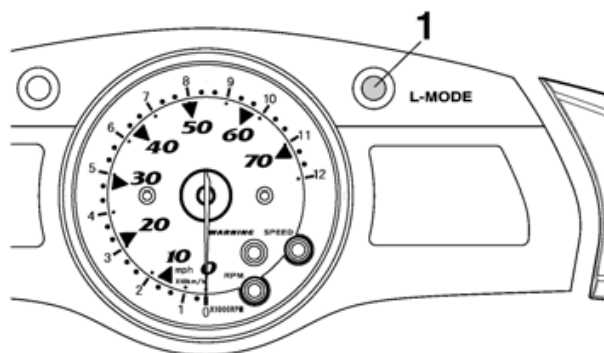
Normal mode

If the beeper sounds twice, the normal mode is activated.

The watercraft can be ridden normally.

Low-RPM mode

If the beeper sounds three times, the low-RPM mode is activated and the “L-MODE” indicator light comes on.



1 “L-MODE” indicator light

Maximum engine speed (r/min) in the low-RPM mode is limited to approximately 80% of the maximum engine speed in the normal mode.

NOTE:

- If neither the start switch nor the remote control transmitter is operated within 25 seconds after the unlock button is pressed to select the unlock mode, the multifunction information center display and the “L-MODE” indicator light will go off. If this occurs, press the lock button on the transmitter briefly to select the lock mode, press the unlock button briefly to select the unlock

mode, and then press the unlock button again for more than 4 seconds to select the normal mode or low-RPM mode.

- While the engine is running, input from the remote control transmitter is not received.

ECJ00080

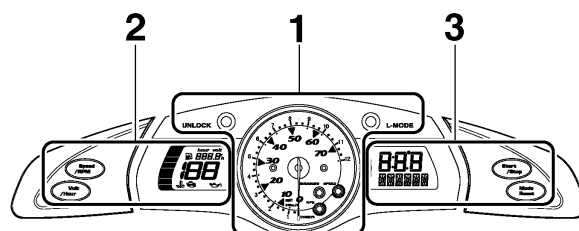
CAUTION:

If the remote control transmitter does not operate when its buttons are pressed, the battery may be low. Have a Yamaha dealer replace the battery.

EJU34902

Multifunction information center

The multifunction information center is equipped with the following three main components for help and convenience in operating the watercraft.



- 1 Analog speedometer/tachometer and indicator lights
- 2 Left multifunction display and operation buttons
- 3 Right multifunction display and operation buttons (for FX Cruiser High Output)

ECJ00072

CAUTION:

Do not run the engine for more than 15 seconds without supplying water or over 4000 r/min when checking the operation of the meter on land, otherwise the engine could overheat.

Features and functions

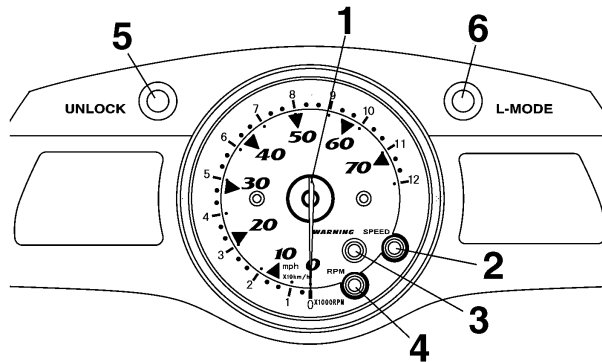
NOTE:

- When the multifunction information center starts operating, the analog speedometer/tachometer makes one sweep, all displays light up for 2 seconds, and then the meter starts to operate normally.
- The multifunction information center will continue to operate for 25 seconds after the engine stops.

EJU34930

Analog speedometer/tachometer and indicator lights

This watercraft is equipped with the following meter and indicator lights.



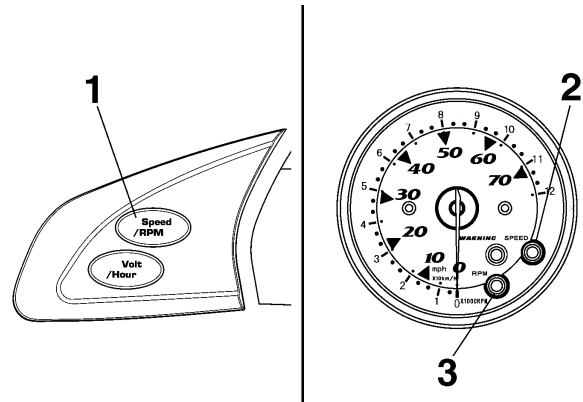
- 1 Analog speedometer/tachometer
- 2 "SPEED" indicator light
- 3 "WARNING" indicator light
- 4 "RPM" indicator light
- 5 "UNLOCK" indicator light
- 6 "L-MODE" indicator light

EJU34941

Analog speedometer/tachometer

The analog speedometer/tachometer can be used as a speedometer or a tachometer. To switch between the speedometer and the tachometer functions, push the "Speed/RPM" button for at least 1 second when the multifunction information center is operating. The "SPEED" indicator light comes on when the analog speedometer is selected. The

"RPM" indicator light comes on when the analog tachometer is selected.



- 1 "Speed/RPM" button
- 2 "SPEED" indicator light
- 3 "RPM" indicator light

NOTE:

When the analog speedometer/tachometer is switched to the speedometer function, the "SPEED" indicator light blinks three times, and then comes on.

Analog speedometer

The analog speedometer shows the watercraft speed against water.

The large inner numbers on the meter show the watercraft speed in miles per hour (mph) and the small outer numbers show the speed in kilometers per hour (km/h) when the speedometer function is selected.

Analog tachometer

The analog tachometer shows the engine speed (r/min).

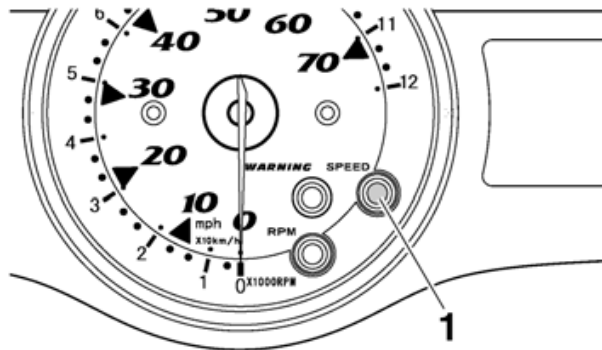
The small outer numbers on the meter show the engine speed when the tachometer function is selected.

Features and functions

EJU34951

“SPEED” indicator light

The “SPEED” indicator light comes on when the analog speedometer is selected.



1 “SPEED” indicator light

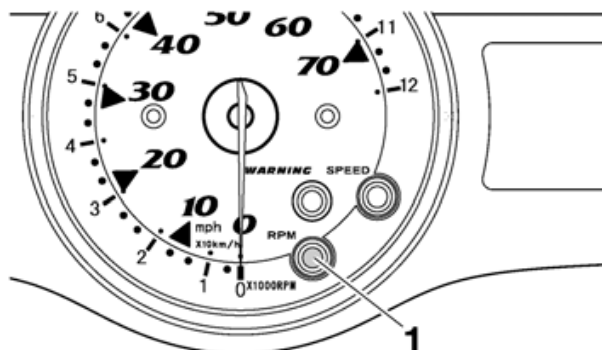
The “SPEED” indicator light blinks three times in the following instances:

- The analog speedometer/tachometer is switched to the speedometer function.
- The display units of the multifunction information center are switched to miles from kilometers.
- Miles are selected as the display units when the multifunction information center starts operating.

EJU34960

“RPM” indicator light

The “RPM” indicator light comes on when the analog tachometer is selected.

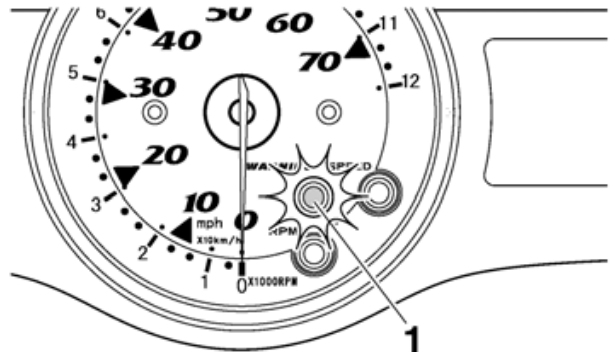


1 “RPM” indicator light

EJU34980

“WARNING” indicator light

The “WARNING” indicator light blinks or comes on, together with a warning indicator, when a malfunction has occurred.

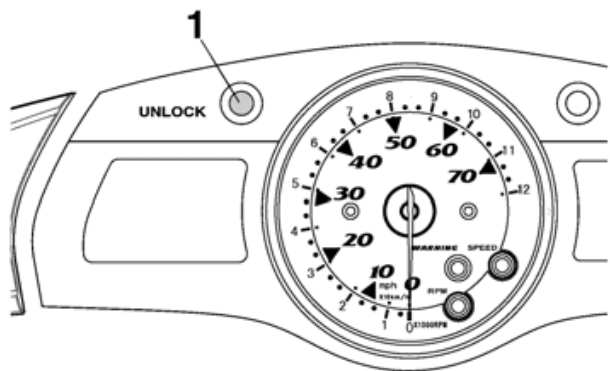


1 “WARNING” indicator light

EJU34990

“UNLOCK” indicator light

The “UNLOCK” indicator light comes on when the unlock mode of the Yamaha Security System is selected. The watercraft can be ridden normally when this light is on. (See page 38 for more information.)



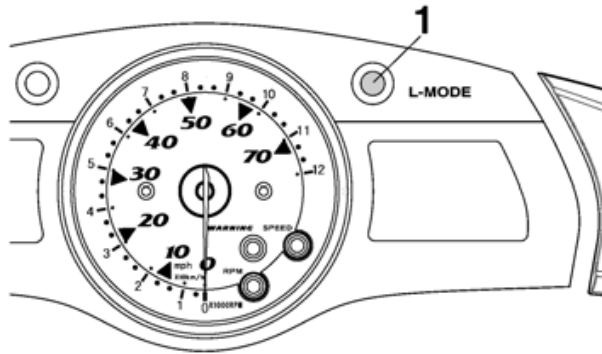
1 “UNLOCK” indicator light

Features and functions

EJU35010

“L-MODE” indicator light

The “L-MODE” indicator light comes on when the low-RPM mode is selected. (See page 39 for more information.)

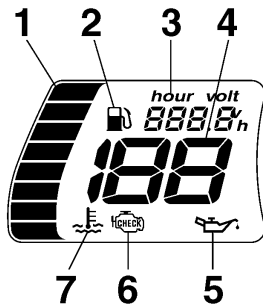


1 “L-MODE” indicator light

EJU35021

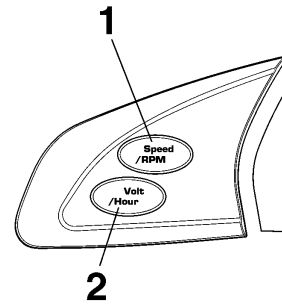
Left multifunction display and operation buttons

The left multifunction display is equipped with the following functions.



- 1 Fuel level meter
- 2 Fuel level warning indicator
- 3 Hour meter/voltmeter
- 4 Digital speedometer
- 5 Oil pressure warning indicator
- 6 Check engine warning indicator
- 7 Engine overheat warning indicator

The following operation buttons are on the left side of the multifunction information center.

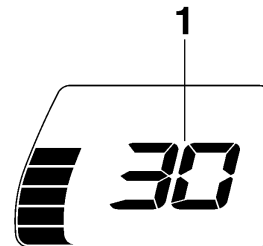


- 1 “Speed/RPM” button
- 2 “Volt/Hour” button

EJU35042

Digital speedometer

The digital speedometer shows the watercraft speed against water.



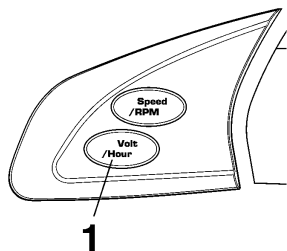
1 Digital speedometer

NOTE:

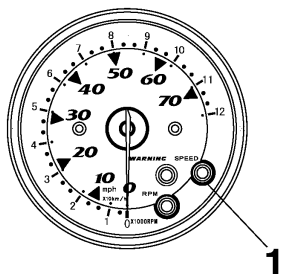
- To switch the speedometer display between kilometers and miles, push the “Volt/Hour” button for at least 1 second, within 10 seconds after the multifunction information center starts operating.
- The “SPEED” indicator light blinks three times if miles are selected as the display units when the multifunction information

Features and functions

center starts operating, or if the display units are switched to miles.



1 "Volt/Hour" button



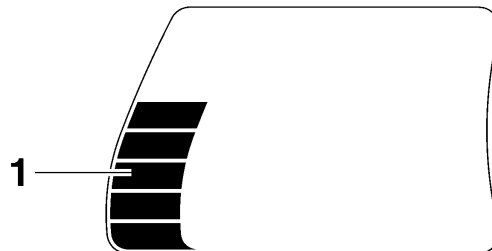
1 "SPEED" indicator light

EJU31511

Fuel level meter

The fuel level meter is provided for convenient fuel level checking while riding.

The fuel level meter has eight segments which show the amount of fuel remaining in the fuel tank.



1 Fuel level meter

NOTE:

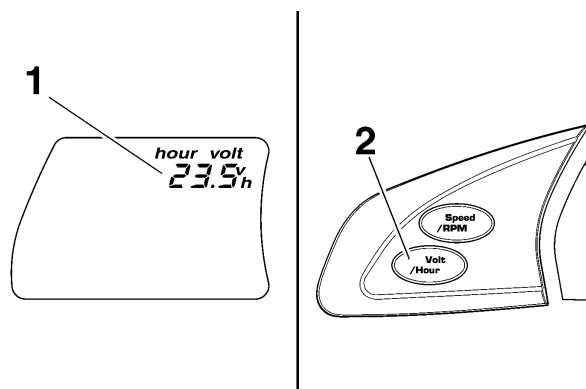
The fuel level is most accurate when the watercraft is sitting level on a trailer or in the water.

EJU35060

Hour meter/voltmeter

NOTE:

To switch the display between the hour meter and the voltmeter, push the "Volt/Hour" button for at least 1 second after the meter is displayed for more than 10 seconds.



1 Hour meter/voltmeter

2 "Volt/Hour" button

Hour meter

The hour meter is provided to make it easy to follow the maintenance schedule.

Features and functions

The meter shows the hours of engine operation that have elapsed since the watercraft was new.

Voltmeter

The voltmeter is provided to display the voltage of the battery.

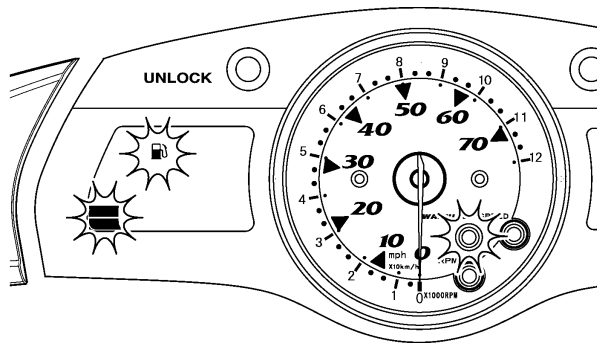
When the battery voltage is normal, the voltmeter displays approximately 12 volts.

If the battery voltage is less than 8.0 volts, "LO" is displayed on the voltmeter and if the voltage is above 18.1 volts, "HI" is displayed on the voltmeter. If "HI" or "LO" is displayed, return to shore and, if necessary, have a Yamaha dealer check the charging system and the battery.

EJU35072

Fuel level warning indicator

If the fuel remaining in the fuel tank drops to about 13 L (3.4 US gal, 2.9 Imp gal), the lowest two fuel level segments, the fuel level warning indicator, and the "WARNING" indicator light begin to blink. The buzzer also starts sounding intermittently.



If this occurs, refill the fuel tank as soon as possible.

The warning signals will be cleared when the engine is restarted after the fuel tank is refilled.

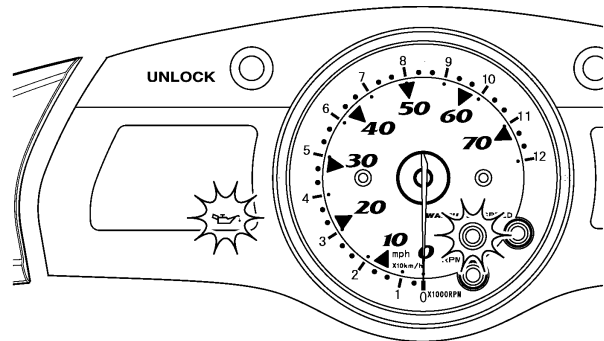
NOTE:

Press any button on the multifunction information center to stop the buzzer.

EJU35122

Oil pressure warning indicator

If the oil pressure does not rise to specification, the "WARNING" indicator light and the oil pressure warning indicator begin to blink, and the buzzer sounds intermittently. At the same time, the engine speed is limited to help prevent damage.



If this occurs, reduce the engine speed, return to shore, and then check the engine oil level. (See page 57 for engine oil level checking procedures.) If the oil level is low, add enough engine oil to raise it to the proper level. If the oil level is sufficient, have a Yamaha dealer check the watercraft.

NOTE:

Press any button on the multifunction information center to stop the buzzer.

EJU35112

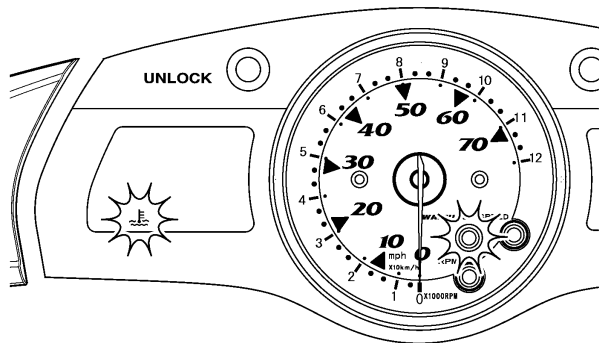
Engine overheat warning indicator

This model is equipped with an engine overheat warning system.

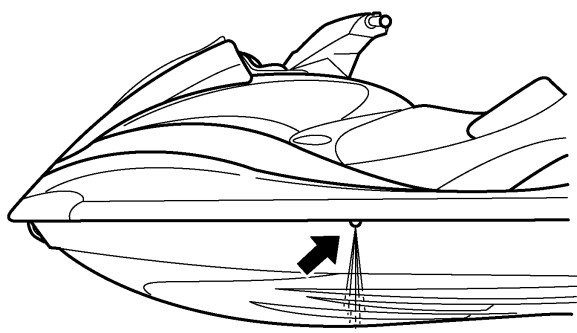
If the engine starts to overheat, the "WARNING" indicator light and the engine overheat warning indicator blink, and then come on. The buzzer also begins to sound intermittently, and then it sounds continuously. After the light and indicator start to blink and the buzzer

Features and functions

sounds, the engine speed is limited to help prevent damage.



If this occurs, immediately reduce the engine speed, return to shore, and then check for water discharge at the port (left) cooling water pilot outlet while the engine is running. If there is no discharge of water, shut the engine off, and then check the intake grate and impeller for clogging.

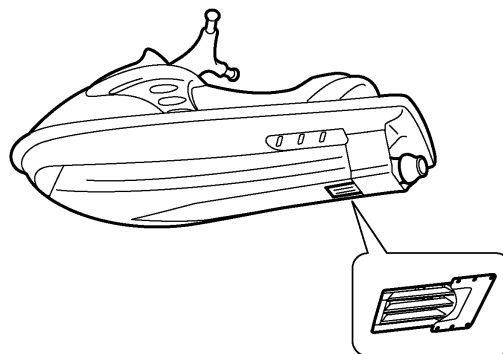
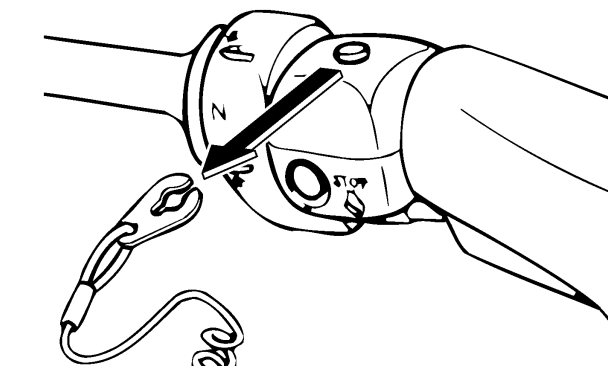


EWJ00050

WARNING

Before attempting to remove weeds or debris from the intake grate or impeller, shut the engine off and remove the clip from the engine shut-off switch. Severe injury or

death could result from coming in contact with the rotating parts of the jet pump.



ECJ00040

CAUTION:

If you cannot locate and correct the cause of the overheating, consult a Yamaha dealer. Continuing to operate at higher speeds could result in severe engine damage.

NOTE:

Press any button on the multifunction information center to stop the buzzer.

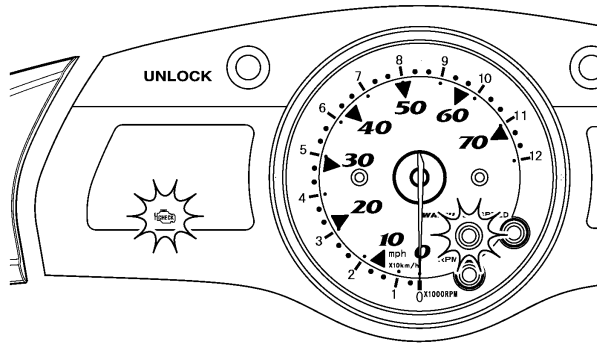
EJU35131

Check engine warning indicator

If a sensor malfunction or a short circuit is detected, the "WARNING" indicator light and the

Features and functions

check engine warning indicator begin to blink, and the buzzer sounds intermittently.



If this occurs, reduce the engine speed, return to shore, and have a Yamaha dealer check the engine.

NOTE:

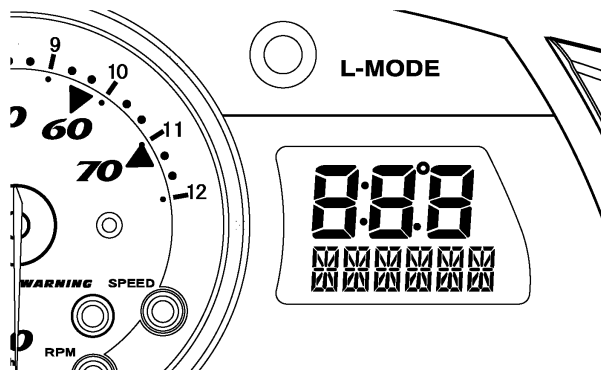
Press any button on the multifunction information center to stop the buzzer.

EJU35033

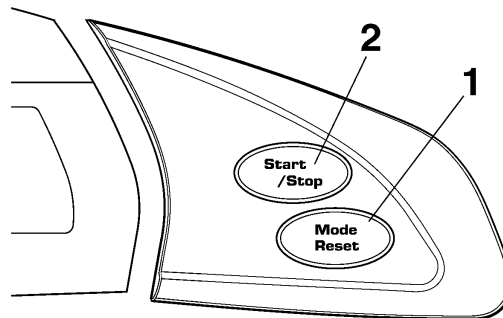
Right multifunction display and operation buttons (for FX Cruiser High Output)

The right multifunction display shows the following information.

- Compass
- Average speed
- Tripmeter
- Trip timer
- Fuel consumption per hour
- Fuel consumption per kilometer/mile
- Water temperature
- Air temperature



The following operation buttons are on the right side of the multifunction information center.



- 1 "Mode/Reset" button
- 2 "Start/Stop" button

To switch the display mode, push the "Mode/Reset" button for less than 1 second. The display mode changes in the following order.

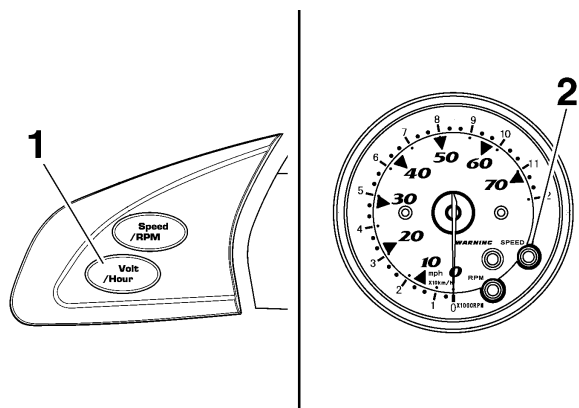
Compass → Average speed → Tripmeter → Trip timer → Fuel consumption per hour → Fuel consumption per kilometer/mile → Water temperature → Air temperature

NOTE:

- To switch the display units between kilometers/liters/degrees Celsius and miles/gallons/degrees Fahrenheit, push the "Volt/Hour" button for at least 1 second, within 10 seconds after the multifunction information center starts operating.
- The "SPEED" indicator light blinks three times if miles/gallons/degrees Fahrenheit are selected as the display units when the multifunction information center starts operating.

Features and functions

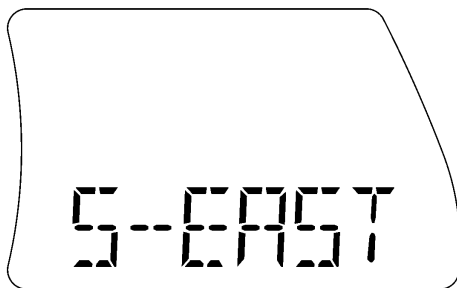
ating, or if the display units are switched to miles/gallons/degrees Fahrenheit.



- 1 "Volt/Hour" button
- 2 "SPEED" indicator light

Compass

This display shows the current direction of the watercraft using the 8 major compass points.

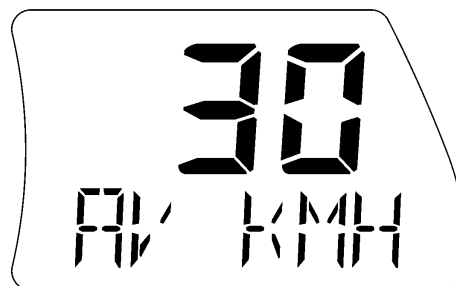


NOTE:

The accuracy of the compass varies depending on the operating conditions. Use this function as a reference only.

Average speed

This display shows the average speed in miles per hour "AV MPH" or kilometers per hour "AV KMH" since it was reset.



Tripmeter

This display shows the distance traveled in miles "MILES" or kilometers "KM" since it was reset.



Trip timer

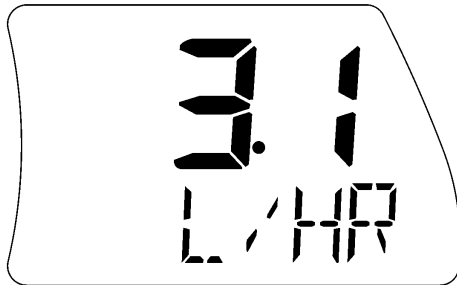
This display shows the hours of operation "TRIPTM" since it was reset.



Features and functions

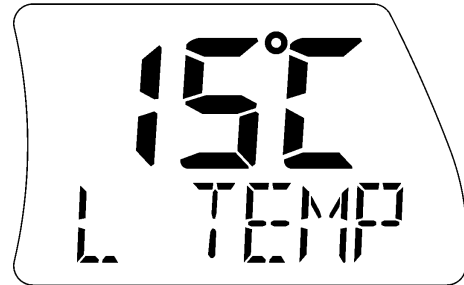
Fuel consumption per hour

This display shows the current fuel consumption in gallons per hour "G/HR" or liters per hour "L/HR".



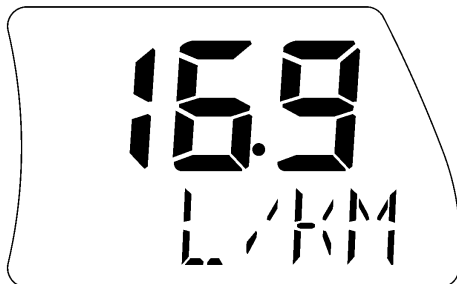
Water temperature

This display shows the ambient water temperature "L TEMP" (lake temperature).



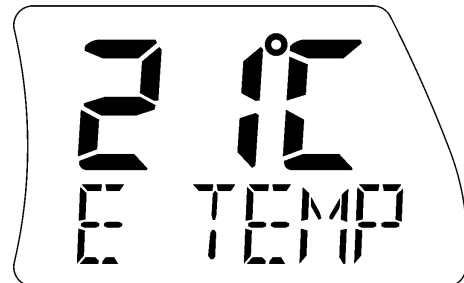
Fuel consumption per kilometer/mile

This display shows the current fuel consumption in gallons per mile "G/MILE" or liters per kilometer "L/KM".



Air temperature

This display shows the ambient air temperature "E TEMP" (environmental temperature).



NOTE:

The actual fuel consumption varies depending on the operating conditions. Use this function as a reference only.

Average speed/Tripmeter/Trip timer modes

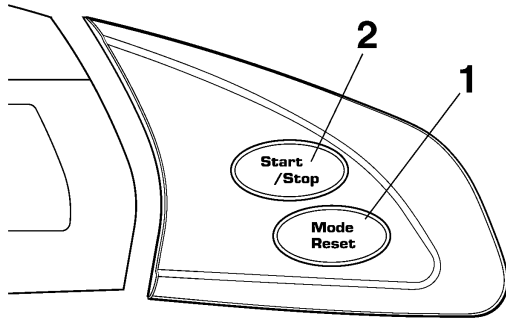
Average speed, distance traveled, and trip time are recorded once measurements have started, regardless of the current display.

To start the measurements, push the "Start/Stop" button for less than 1 second. The beeper sounds once.

To stop the measurements, push the "Start/Stop" button for less than 1 second. The beeper sounds once. To restart the measurements, push the "Start/Stop" button for less than 1 second. The beeper sounds once. To reset the displays, push the "Mode/Reset" button for at least 2 seconds while the mea-

Features and functions

measurements are stopped. The beeper sounds twice.



- 1 "Mode/Reset" button
- 2 "Start/Stop" button

NOTE:

- The displays can be reset only when the measurements are stopped.
- The measurements are not saved if the engine is stopped. The displays are reset automatically when they go off 25 seconds after the engine stops.

EJU35141

Storage compartments

A front storage compartment, glove compartment, seat storage compartment, watertight compartment, and beverage holder are provided.

NOTE:

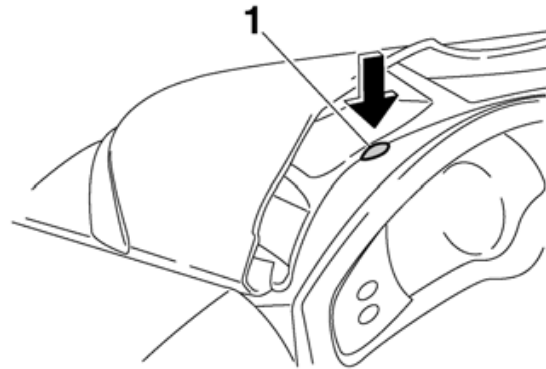
- Make sure that the storage compartments are closed securely before operating the watercraft.
- The front storage compartment, glove compartment, and seat storage compartment are not designed to be watertight. If you carry objects that must be kept dry, such as the manuals, put them in a waterproof bag or the watertight compartment.

EJU35151

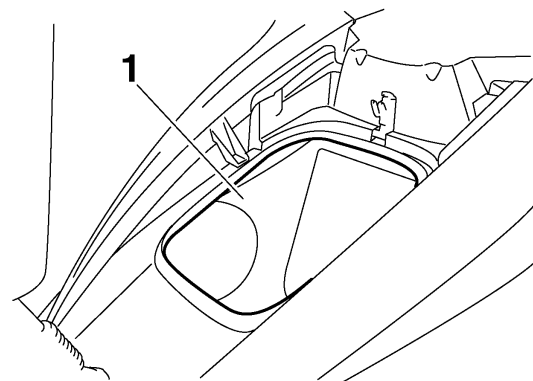
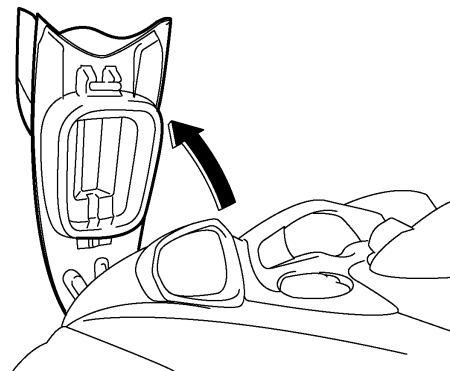
Front storage compartment

The front storage compartment is located at the bow.

To open the front storage compartment, push the hood latch down, and then lift up the hood.



1 Hood latch



1 Front storage compartment

Features and functions

Front storage compartment:

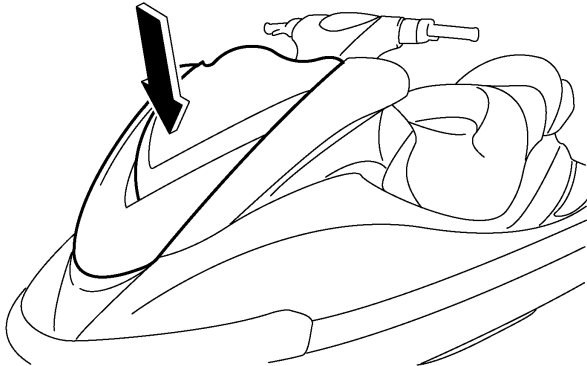
Capacity:

75.0 L (19.8 US gal) (16.5 Imp.gal)

Load limit:

5.0 kg (11 lb)

To close the front storage compartment, push down on the rear of the hood until it latches securely.



NOTE:

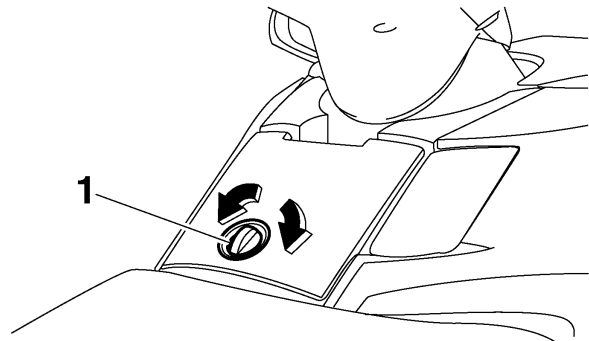
Make sure that the front storage compartment is securely closed before operating the watercraft.

EJU35161

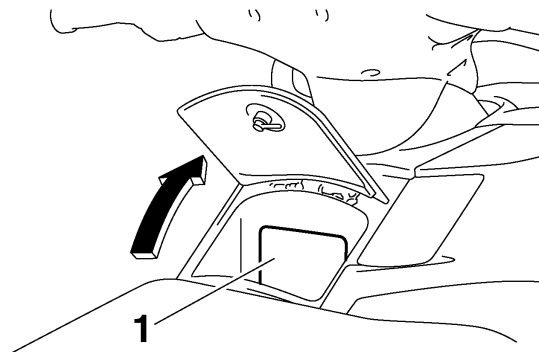
Glove compartment

The glove compartment is located in front of the seat.

To open the glove compartment, turn the glove compartment knob, and then lift up the lid.



1 Glove compartment knob



1 Glove compartment

Glove compartment:

Capacity:

5.5 L (1.5 US gal) (1.2 Imp.gal)

Load limit:

1.0 kg (2 lb)

To close the glove compartment, lower the lid, and then turn the glove compartment knob to lock the lid in place.

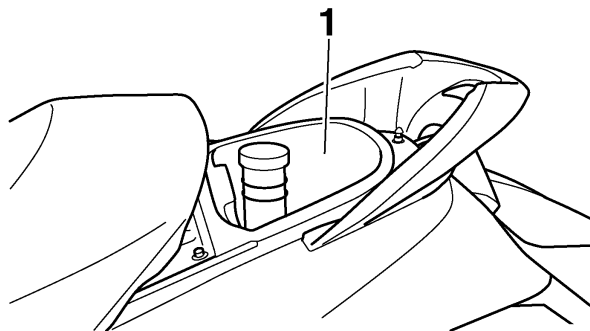
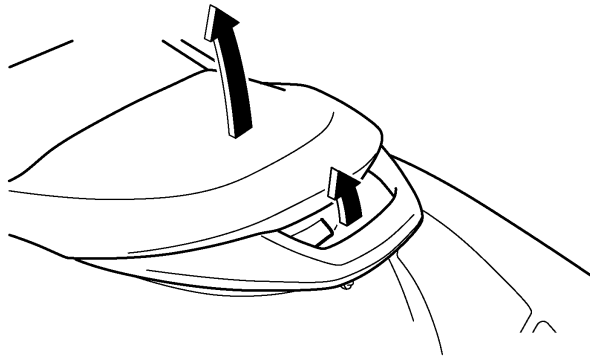
EJU31760

Seat storage compartment

The seat storage compartment is located under the rear seat.

Features and functions

To open the seat storage compartment, remove the rear seat. (See page 28 for rear seat removal and installation procedures.)



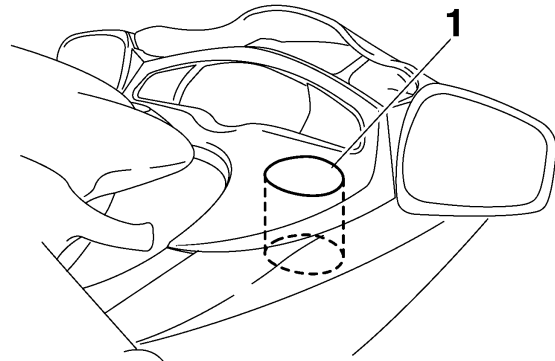
1 Seat storage compartment

Seat storage compartment:
Capacity:
15.0 L (4.0 US gal) (3.3 Imp.gal)
Load limit:
9.0 kg (20 lb)

EJU35170

Beverage holder

The beverage holder is located on the starboard (right) side of the watercraft.



1 Beverage holder

NOTE:

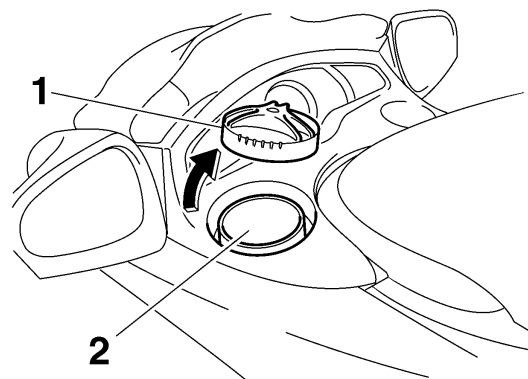
Do not place beverages in the beverage holder when operating the watercraft.

EJU35182

Watertight compartment

The watertight compartment is located on the port (left) side of the watercraft.

To open the watertight compartment, turn the cap counterclockwise.



1 Watertight compartment cap

2 Watertight compartment

Watertight compartment:

Capacity:
2.6 L (0.7 US gal, 0.6 Imp gal)
Load limit:
1.0 kg (2.2 lb)

Features and functions

NOTE: _____

Make sure that the watertight compartment cap is closed securely before operating the watercraft.

EJU31820

Fuel and oil

This watercraft is equipped with a 4-stroke engine. Conventional 2-stroke engine oil cannot be used.

The engine utilizes an electronic fuel injection system to deliver the optimal air-fuel ratio required by the engine. By ensuring the optimal combustion conditions, this system is able to increase startability and improve fuel economy.

EJU31841

Gasoline

EWJ00280



WARNING

GASOLINE AND ITS VAPORS ARE HIGHLY FLAMMABLE AND EXPLOSIVE!

- Do not smoke when refueling, and keep away from sparks, flames, and other sources of ignition.
- Stop the engine before refueling.
- Refuel in a well-ventilated area with the watercraft in a horizontal position.
- Do not stand or sit on the watercraft while refueling in case of fire.
- Take care not to spill gasoline. If gasoline spills, wipe it up immediately with dry rags. Always properly dispose of gasoline-soaked rags.
- Avoid overfilling the fuel tank. Stop filling when the fuel level reaches approximately 50 mm (2 in) from the top of the fuel tank. Fuel expands as it warms up and could overflow if the fuel tank has been overfilled. If temporarily leaving the watercraft with a full fuel tank, do not leave it in direct sunlight. Leave it in a well-ventilated area with the watercraft in a horizontal position.
- Tighten the fuel tank filler cap securely after refueling.

- If you should swallow some gasoline, inhale a lot of gasoline vapor, or get gasoline in your eyes, get immediate medical attention.
- If any gasoline spills on your skin or clothing, immediately wash the affected area with soap and water and change your clothes.

ECJ00310

CAUTION:

Use only fresh gasoline that has been stored in clean containers.

Recommended gasoline:

Regular unleaded gasoline with a minimum octane rating of

86 (Pump octane number) = $(R + M)/2$

90 (Research octane number)

EJU31860

Gasohol

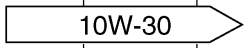
There are two types of gasohol: gasohol containing ethanol and that containing methanol. Gasohol containing ethanol can be used if ethanol content does not exceed 10% and the fuel meets the minimum octane ratings.

Gasohol containing methanol is not recommended by Yamaha because it can cause fuel system damage and engine performance problems.

EJU31890

Engine oil

Use a combination of the recommended SAE and API engine oil classifications shown in the chart below.

SAE				API
-4	32	68	104 °F	SE
-20	0	20	40 °C	SF
				SG
				SH
				SJ
				SL

ECJ00280

CAUTION:

Use only 4-stroke engine oil.

EJU31951

Filling the fuel tank

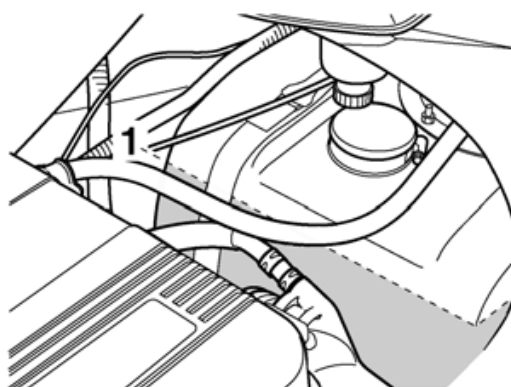
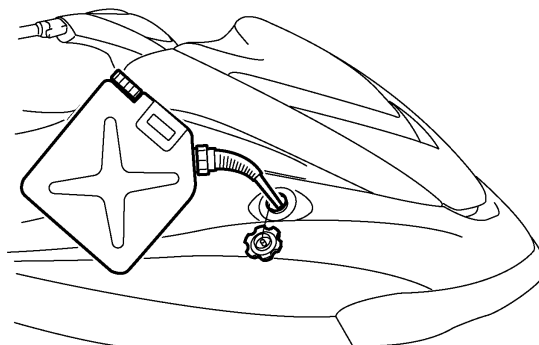
ECJ00290

CAUTION:

Be careful when refueling. Avoid getting water and other contaminants in the fuel tank. Contaminated fuel can cause poor running and engine damage.

- (1) Remove the seats. (See page 28 for seat removal and installation procedures.)
- (2) Remove the fuel tank filler cap, and then slowly add fuel to the fuel tank. Stop filling when the fuel level reaches approximate-

ly 50 mm (2 in) from the top of the fuel tank as indicated in the illustration.



1 Approximately 50 mm (2 in) from top of the fuel tank

- (3) Install the fuel tank filler cap and the seats.

Fuel tank capacity:
70 L (18.5 US gal) (15.4 Imp.gal)

Pre-operation checks

Pre-operation check list

Before operating this watercraft, perform the checks in the following check list. See the accompanying text in this chapter for details on how to perform the checks.



WARNING

If any item in the pre-operation check list is not working properly, have it inspected and repaired before operating the watercraft, otherwise an accident could occur.

ITEM	ROUTINE	PAGE
BEFORE LAUNCH OR OPERATION		
Engine compartment	Remove the seats to ventilate the engine compartment. Check for fuel vapors and loose electrical connections.	57
Bilge	Check for water and fuel and drain if necessary.	58
Stern drain plugs	Check for proper installation.	59
Throttle lever	Check that the throttle lever springs back smoothly.	61
Steering system	Check for proper operation. Check that the handlebars are locked in place.	61
Shift lever and reverse gate	Check for proper operation.	61
QSTS	Check for proper operation.	62
Fuel and oil	Check the fuel and oil levels and replenish if necessary. Check the hoses and tanks for leakage.	57, 57
Water separator	Check for water and drain if necessary.	58
Battery	Check the electrolyte level and battery condition.	59
Hood	Check that the hood is securely closed.	29
Front and rear seats	Check that the seats are securely installed.	28
Hull and deck	Check the hull and deck for cracks and other damage.	57
Jet intake	Check for debris and remove if necessary.	63
Fire extinguisher	Check the condition and replace if necessary.	60
Engine shut-off cord	Check the condition and replace if frayed or broken.	63
Switches	Check the start switch, engine stop switch, and engine shut-off switch for proper operation.	64
AFTER LAUNCH		
Cooling water pilot outlet	Check that water is discharged while the engine is running and the watercraft is in the water.	64
Multifunction information center	Check for warning indications and proper operation.	64

NOTE:

Pre-operation checks should be made each time the watercraft is used. These checks can be completed in a short time. It is worth the time spent to ensure safety and reliability.

Operation

EJU32280

Pre-operation check points

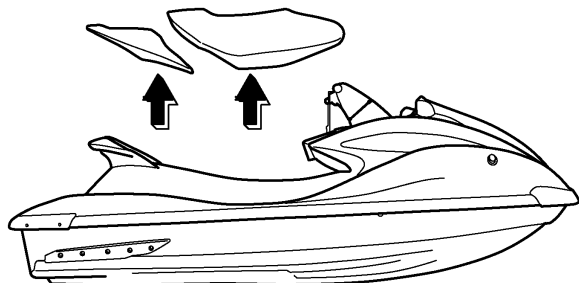
EJU32330

Engine compartment

Ventilate the engine compartment before each use.

To ventilate the engine compartment, remove the seats. (See page 28 for seat removal and installation procedures.) Leave the engine compartment open for a few minutes to allow any fuel vapors to escape.

While the engine compartment is open, check for loose electrical connections.



EWJ00460



Failure to ventilate the engine compartment could result in a fire or explosion. Do not start the engine if there is a fuel leak or a loose electrical connection.

EJU32350

Hull and deck

Check the hull and deck for cracks and other damage. If any damage is found, have a Yamaha dealer repair the watercraft.

EJU32380

Fuel level

Check the fuel system for leakage, cracks, and malfunctions before each use. (See page 86 for check points and correct procedures.)

- (1) Remove the fuel tank filler cap to release any pressure that might have built up in the fuel tank.

- (2) Remove the seats. (See page 28 for seat removal and installation procedures.)
- (3) Check the fuel level in the fuel tank and replenish if necessary. (See page 54 for filling procedures.)
- (4) Install the fuel tank filler cap and the seats.

EJU32411

Engine oil level

Check the engine oil level before each use.

ECJ00390

CAUTION:

- When checking the engine oil level on water, be careful of other watercraft, boats, swimmers, and obstacles. The water current and wind can cause the watercraft to move and lead to a collision.
- When checking the engine oil level on land, supply water to the cooling water passages. (See page 79 for procedures on supplying water.)
- Make sure that the engine has enough oil, but do not overfill it. If there is too little oil, the engine can be damaged. If there is too much oil, the air filter can become saturated with oil, permanently damaging the filter and reducing engine performance. Follow the checking procedure carefully.
- Make sure that debris and water do not enter the oil tank filler hole. Debris and water in the engine oil can cause serious engine damage.

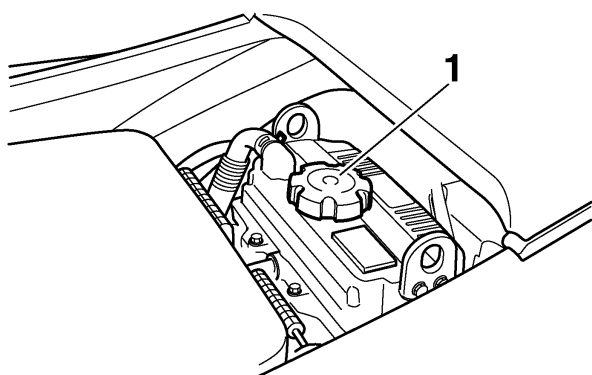
To check the engine oil level:

- (1) Place the watercraft in a horizontal position or launch the watercraft, and then start the engine.
- (2) Run the engine at trolling speed for 6 minutes or more, and then stop the engine.

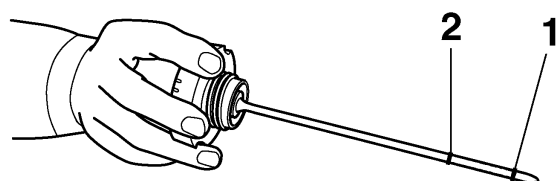
NOTE:

If the ambient temperature is 20 °C (68 °F) or less, warm up the engine for an additional 5 minutes.

- (3) Remove the seats. (See page 28 for seat removal and installation procedures.)
- (4) Remove the oil tank filler cap, wipe the dipstick clean, and then screw the filler cap into the filler hole completely. Remove the filler cap again and check that the engine oil level is between the minimum level mark and maximum level mark on the dipstick.



1 Oil tank filler cap



- 1 Minimum level mark
- 2 Maximum level mark

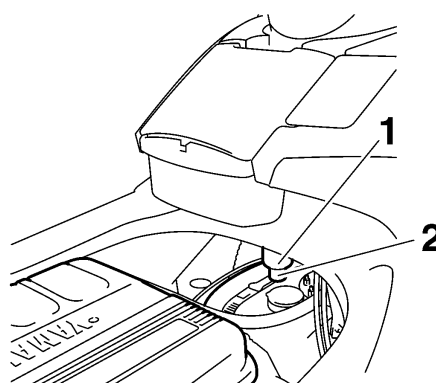
- (5) If the engine oil level is below the minimum level mark, add enough oil so that the oil level is between the minimum and maximum level marks on the dipstick,

and then install the filler cap. If the engine oil level is significantly above the maximum level mark, the oil tank is overfilled. Have a Yamaha dealer remove the excessive amount of engine oil.

EJU32420

Water separator

Check the water separator for water. The water separator retains any water that may have entered through the fuel tank breather hose if the watercraft was capsized. Normally, the water separator is empty.



- 1 Water separator
- 2 Drain screw

If water remains in the water separator, drain it by removing the drain screw. Place a drain pan under the water separator to catch the draining water or use a dry cloth to soak up any water that could spill into the watercraft. If any water spills into the watercraft, be sure to wipe it up with a dry cloth. Also, be sure to install the drain screw after draining the water separator.

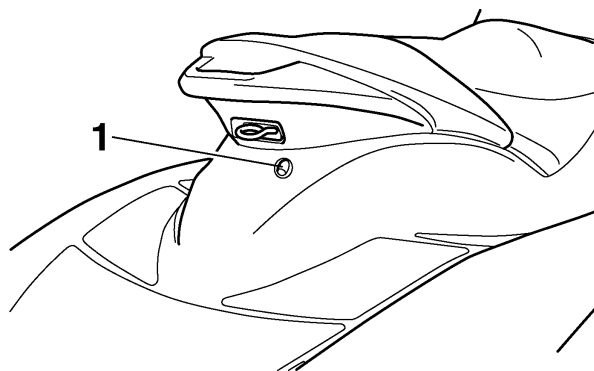
EJU32450

Bilge

Check the bilge for moisture and fuel residue. This watercraft is equipped with a conventional jet vacuum bilge draining system and an electric bilge draining system. The electric bilge draining system is operated when the engine is running. When excess water reaches the water inlet of the electric bilge pump,

Operation

the water is discharged from the electric bilge pilot outlet at the stern.



1 Electric bilge pilot outlet

A small quantity of water will remain in the bilge and should be drained manually. To drain any residual water, beach the watercraft and perform the following procedure.

ECJ00350

CAUTION:

If starting the engine after the watercraft has capsized, do not operate the engine at full throttle when water is being discharged from the electric bilge pilot outlet at the stern. Excessive water in the bilge can splash into the engine, which can result in severe damage.

To drain water from the bilge:

- (1) Remove the stern drain plugs.
- (2) Raise the bow of the watercraft until the water drains.
- (3) After the water has drained, wipe the bilge with dry rags to make sure that it is thoroughly dry.
- (4) Install the stern drain plugs.

ECJ00360

CAUTION:

- **Before installing the stern drain plugs, clean the drain plug threads to remove any foreign materials, such as dirt or sand. Otherwise, the stern drain plugs**

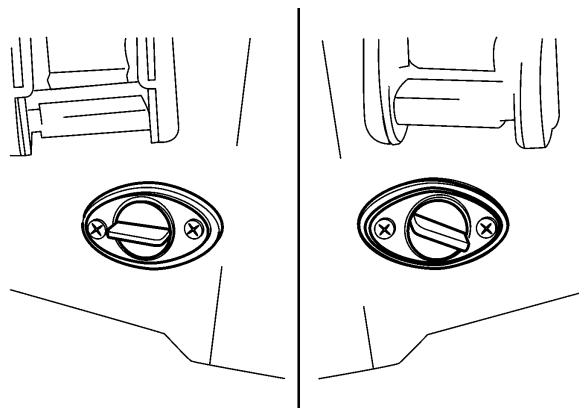
could be damaged, allowing water to enter the engine compartment.

- **Make sure that the stern drain plugs are tightened securely before launching the watercraft. Otherwise, water may flood the engine compartment and cause the watercraft to submerge.**

EJU32470

Stern drain plugs

Check the stern drain plugs for proper installation.



ECJ00360

CAUTION:

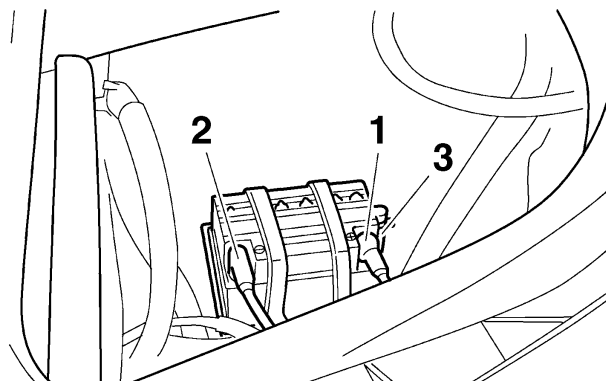
- **Before installing the stern drain plugs, clean the drain plug threads to remove any foreign materials, such as dirt or sand. Otherwise, the stern drain plugs could be damaged, allowing water to enter the engine compartment.**
- **Make sure that the stern drain plugs are tightened securely before launching the watercraft. Otherwise, water may flood the engine compartment and cause the watercraft to submerge.**

EJU32481

Battery

Check the battery electrolyte level and check that the battery has sufficient power to start the engine easily. Recharge the battery or replace it if it is not in good condition. (See page 92 for battery recharging procedures.)

Also, check that the battery leads are tightened securely and that there is no corrosion on the battery terminals. Check that the breather hose is securely connected to the battery and that it is not pinched.



- 1 Positive (+) battery terminal: Red lead
- 2 Negative (-) battery terminal: Black lead
- 3 Breather hose

EWJ00450

WARNING

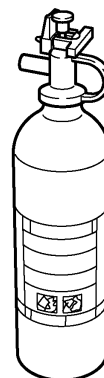
- **The battery must always be fully charged and in good condition. Loss of battery power may leave you stranded. Never operate the watercraft if the battery does not have sufficient power to start the engine or if it shows any other signs of decreased power.**
- **Be sure to connect the breather hose to the battery. Fire or explosion could result if the breather hose is damaged, obstructed, or not connected properly.**

Make sure that the battery is securely held in place.

EJU32570

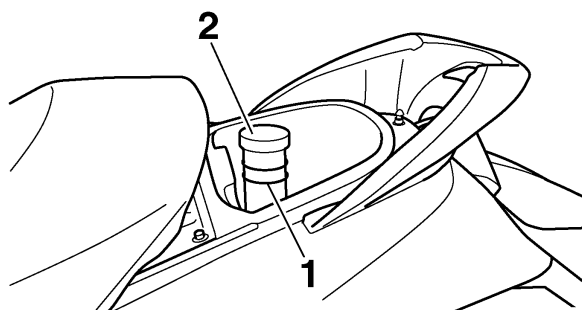
Fire extinguisher

Check that there is a full fire extinguisher on board.



The fire extinguisher container is located in the seat storage compartment.

To open the fire extinguisher container, turn the cap counterclockwise.



- 1 Fire extinguisher container
- 2 Fire extinguisher container cap

To close the fire extinguisher container, insert the fire extinguisher into the container, and then install the cap and tighten it securely.

NOTE:

- To check the fire extinguisher, see the instructions supplied by the fire extinguisher manufacturer. Always keep the fire extinguisher in the fire extinguisher container.
- Always carry a fire extinguisher on board. A fire extinguisher is not standard equipment with this watercraft. If you do not have one,

Operation

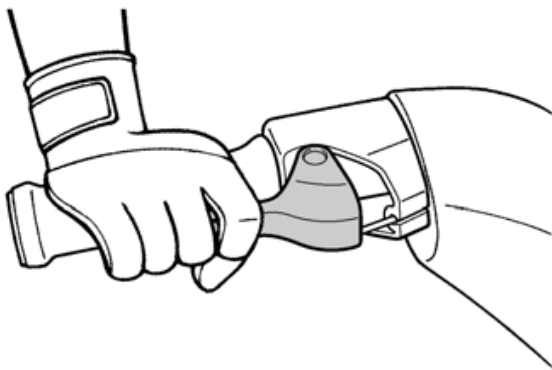
contact a Yamaha dealer or a fire extinguisher dealer to obtain one meeting the proper specifications.

Fire extinguisher:
Classification:
B-1
Capacity:
2 lb or more

EJU32590

Throttle lever

Check the throttle lever for proper operation. Squeeze and release the throttle lever several times to make sure that there is no hesitation in its travel. It should be smooth over the complete range and spring back to the idle position when released.



EWJ00490



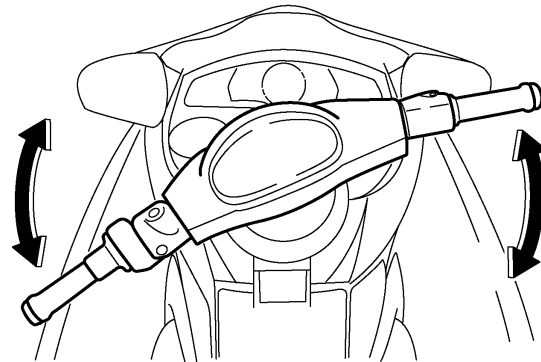
Before starting the engine, always check the operation of the throttle lever.

EJU32610

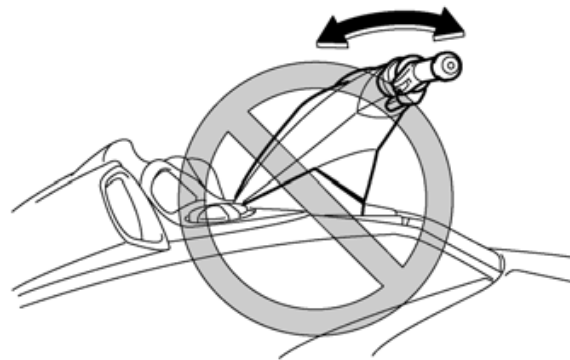
Steering system

Check the handlebars for looseness. Turn the handlebars as far as possible to the right and left to make sure that operation is smooth and unrestricted throughout the whole range. Also, make sure that the jet thrust nozzle moves as the handlebars are

turned, and that there is no free play between the handlebars and the jet thrust nozzle.



Check that the handlebars are locked in place. (See "Tilt lever" on page 33 for more information.)



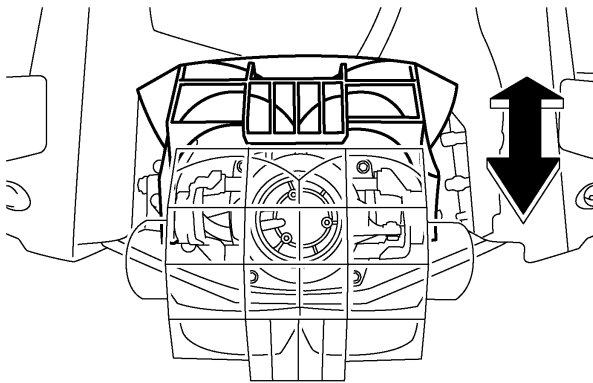
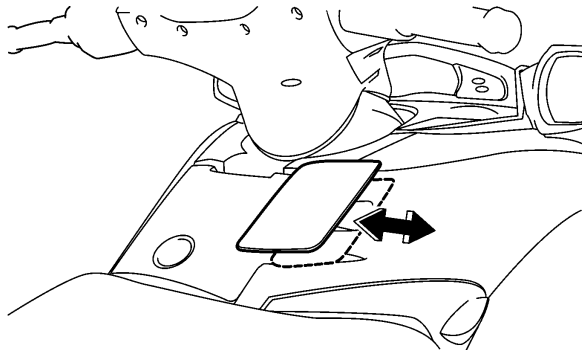
EJU36580

Shift lever and reverse gate

Check the shift lever and reverse gate for proper operation.

Make sure that the reverse gate goes down completely when the shift lever is pulled up.

Also, make sure that the reverse gate goes up completely when the shift lever is pushed down.



EWJ00030

WARNING

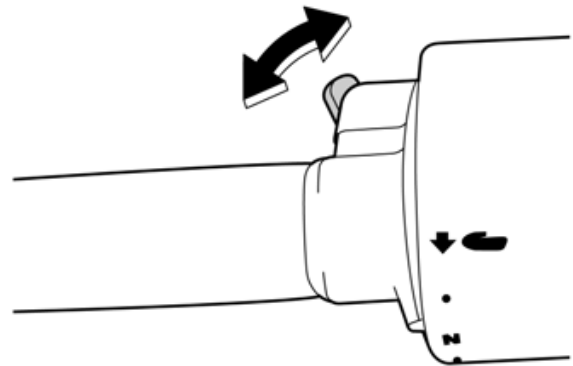
- Make sure that the throttle lever is completely released and that the engine is at idle before shifting into reverse.
- Do not use the reverse function to slow down or stop the watercraft as it could cause you to lose control, be ejected, or impact the handlebars.
- Use reverse for slow-speed maneuvering only.
- Make sure that there are no obstacles or people behind you before shifting into reverse.
- Do not touch the reverse gate while the shift lever is being operated, otherwise you could be pinched.

EJU32641

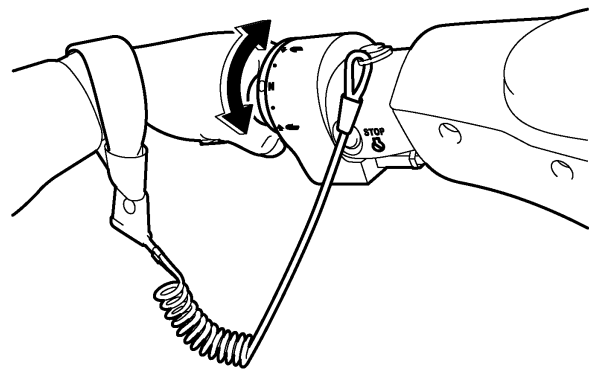
Quick Shift Trim System (QSTS)

Operate the QSTS selector lock lever and the QSTS selector several times to check that they operate properly.

- (1) Squeeze the QSTS selector lock lever and check that it returns smoothly to its original position when released.



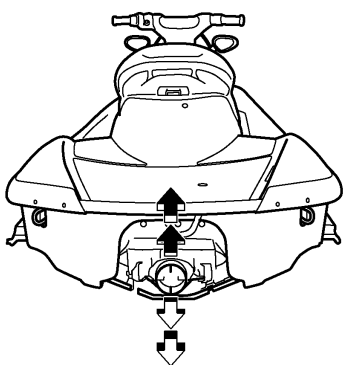
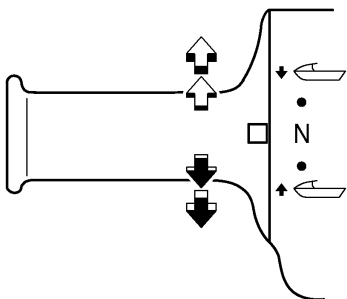
- (2) Check that the QSTS selector turns smoothly when the lever is squeezed and check that the selector locks in place at each position when the lever is released.



- (3) Check that the angle of the jet thrust nozzle changes when the QSTS selector is

Operation

shifted from neutral to bow up or bow down.



If the mechanism does not work properly, have a Yamaha dealer service it.

EJU32650

Jet intake

Carefully check the jet intake for weeds, debris, or anything else that might restrict the intake of water. If the jet intake is clogged, cavitation could occur, reducing jet thrust, and possibly damaging the jet pump.

In some cases, the engine may overheat because of lack of cooling water, and damage to the engine could result. Cooling water is fed to the engine by the jet pump. (See page 98 for jet intake cleaning procedures.)

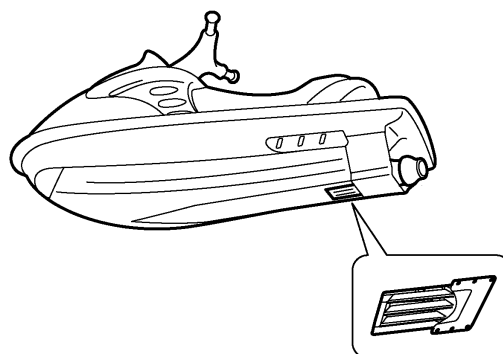
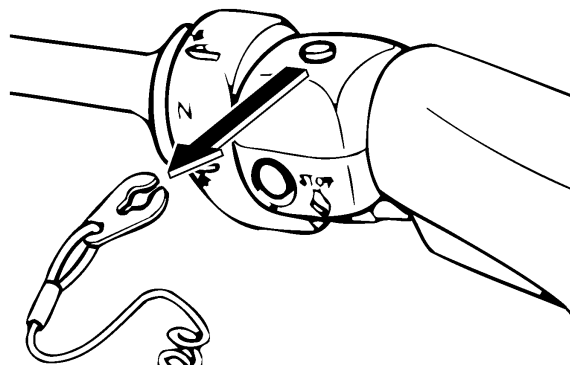
EWJ00470

WARNING

- Keep away from the intake grate while the engine is on. Items such as long hair, loose clothing, or PFD straps can be-

come entangled in moving parts, resulting in severe injury or drowning.

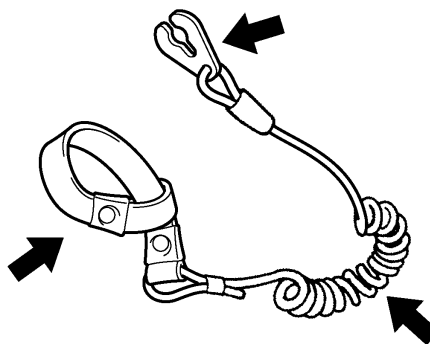
- Stop the engine and remove the clip from the engine shut-off switch before removing any debris or weeds, which may have collected around the jet intake.



EJU32660

Engine shut-off cord

Check that the engine shut-off cord is not frayed or broken. If the cord is damaged, replace it; never try to repair it or tie it together.



EJU32670

Switches

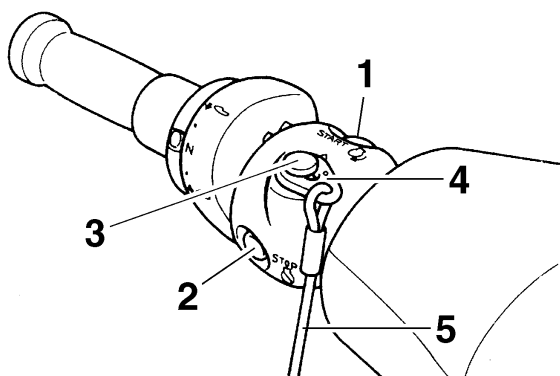
ECJ00410

CAUTION:

Do not run the engine for more than 15 seconds when checking the switches on land without supplying water, otherwise the engine could overheat.

Check the start switch, the engine stop switch, and the engine shut-off switch for proper operation.

Push the start switch to start the engine. As soon as the engine starts running, push the engine stop switch to verify that the engine stops immediately. Restart the engine, and then pull the engine shut-off cord to remove the clip from the engine shut-off switch to verify that the engine stops immediately. (See pages 31 to 32 for information on proper operation of the start switch, the engine stop switch, and the engine shut-off switch.)



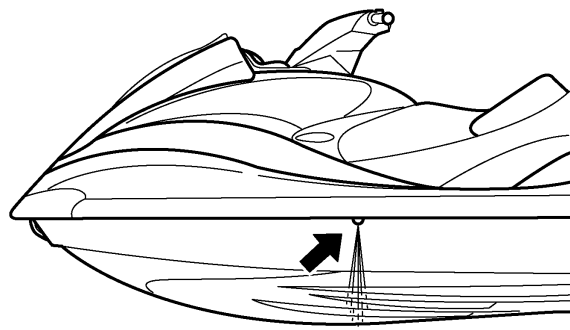
- 1 Start switch
- 2 Engine stop switch
- 3 Engine shut-off switch
- 4 Clip
- 5 Engine shut-off cord

EJU32700

Cooling water pilot outlet

Check that water comes out from the port (left) cooling water pilot outlet while the engine

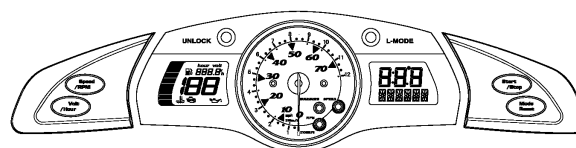
is running and the watercraft is in the water. (See page 32 for more information.)



EJU32710

Multifunction information center

Check the multifunction information center for proper operation. (See page 39 for information on proper operation of the multifunction information center.)



Operation

EJU32740

Operation

EWJ00510

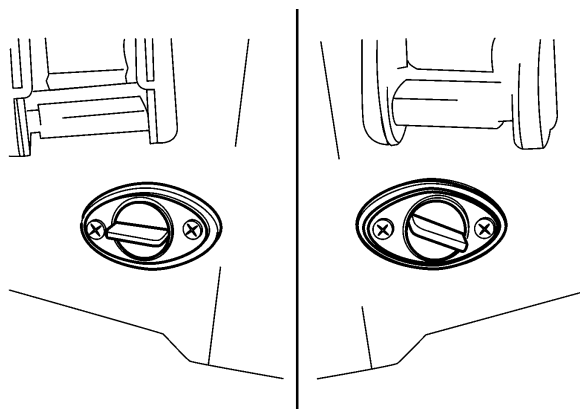
WARNING

Before operating your watercraft, become familiar with all of the controls. Consult a Yamaha dealer about any control or function that you do not fully understand. Failure to understand how the controls work could cause an accident or prevent you from avoiding an accident.

ECJ00460

CAUTION:

Make sure that the stern drain plugs are tightened securely before launching the watercraft.



EJU36140

Engine break-in

The engine break-in period is essential to allow the various components of the engine to wear and polish themselves to the correct operating clearances. This ensures proper performance and promotes longer component life.

ECJ00440

CAUTION:

Be sure to check the engine oil level before operating the watercraft for the first time. (See page 57 for engine oil checking procedures.)

- (1) Launch the watercraft and start the engine. (See page 65 for engine starting procedures.)
- (2) For the first 5 minutes, run the engine at trolling speed only. For the 30 minutes of operation after that, keep the engine speed below 5000 r/min. For the 1 hour of operation after that, keep the engine speed below 8000 r/min.
- (3) Proceed with normal operation.

ECJ00430

CAUTION:

Failure to follow the engine break-in procedure could result in reduced engine life or even severe engine damage.

EJU32801

Launching the watercraft

When launching the watercraft, make sure that there are no obstacles behind you.

Use the remote control transmitter to select the unlock mode. (See page 38 for Yamaha Security System lock and unlock mode selection procedures.)

After the watercraft is in the water, start the engine. Shift into reverse and move the watercraft back slowly. If there are waves, someone should make sure that the watercraft is not pushed into the trailer before backing away.

EJU36340

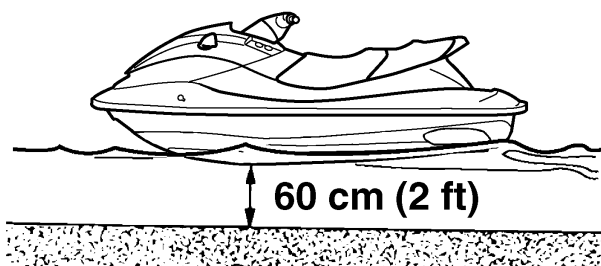
Starting the engine

EWJ00560

WARNING

Never start the engine or let it run for any length of time in an enclosed area. Exhaust fumes contain carbon monoxide, a colorless, odorless gas that may cause loss of consciousness and death within a short time. Always operate the watercraft in an open area.

- (1) If the lock mode of the Yamaha Security System is selected, use the remote control transmitter to select the unlock mode. (See page 38 for Yamaha Security System lock and unlock mode selection procedures.)
- (2) Launch the watercraft in water free from weeds and debris and at least 60 cm (2 ft) deep.
- (3) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.



EWJ00570

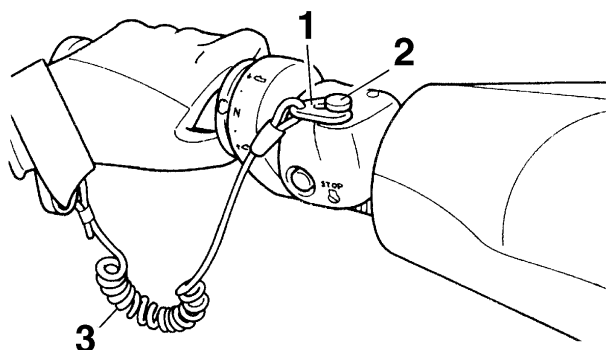
WARNING

Never operate in water that is less than 60 cm (2 ft) deep, otherwise you increase your chance of hitting a submerged object, which could result in injury.

ECJ00470

CAUTION:

Never operate in water that is less than 60 cm (2 ft) deep, otherwise pebbles or sand could be sucked into the jet intake, causing impeller damage and engine overheating.



- 1 Clip
- 2 Engine shut-off switch
- 3 Engine shut-off cord

EWJ00580

WARNING

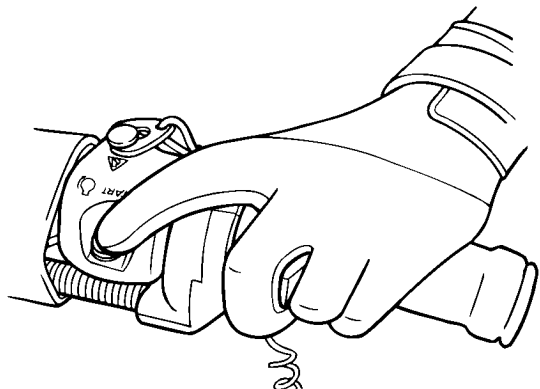
Check that the engine shut-off cord is not frayed or broken, and keep it free from the handlebars so that the engine stops if the operator falls off. The engine shut-off cord may not pull free if wrapped around the handlebars when the operator falls off, allowing the watercraft to continue to run and cause an accident.

NOTE:

It is not possible to start the engine with the clip removed from the engine shut-off switch.

Operation

- (4) Push the start switch (green button), and then release it as soon as the engine starts to run.



NOTE:

The engine will not start if the throttle lever is squeezed.

ECJ00480

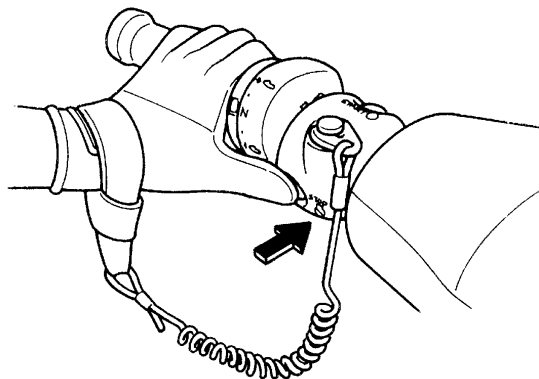
CAUTION:

- Never push the start switch while the engine is running.
- Do not operate the start switch for more than 5 seconds, otherwise the battery will be discharged and the engine will not start. Also, the starter motor could be damaged. If the engine does not start in 5 seconds, release the start switch, wait 15 seconds, and then try again.

EJU32860

Stopping the engine

To stop the engine, release the throttle lever, and then push the engine stop switch (red button).



EWJ00600

! WARNING

You need throttle to steer. Shutting the engine off can cause you to hit an obstacle you are attempting to avoid. A collision could result in severe injury or death.

EJU32881

Leaving the watercraft

If leaving the watercraft, select the lock mode of the Yamaha Security System and remove the engine shut-off cord to reduce the chance of accidental starting or unauthorized use by children or others. (See page 38 for Yamaha Security System lock and unlock mode selection procedures.)

EJU32900

Operating your watercraft

EJU32951

Getting to know your watercraft

Operating your watercraft requires skills acquired through practice over a period of time. Take the time to learn the basic techniques well before attempting more difficult maneuvers.

Operating your new watercraft can be a very enjoyable activity, providing you with hours of pleasure. However, it is essential to familiarize yourself with the operation of the watercraft to achieve the skill level necessary to enjoy riding safely.

Before operating this watercraft, read this owner's/operator's manual, the Riding Practice Guide, the Riding Instruction card, and all warning and caution labels on the watercraft. Pay particular attention to the safety information on page 8. Also, watch the Basic Orientation Video provided with your watercraft. These materials should give you an understanding of the watercraft and its operation. Remember: This watercraft is designed to carry the operator and up to 2 passengers. Never exceed the maximum load limit or allow more than 3 persons (or 2 persons if a water skier is being pulled) to ride the watercraft at any time.

Maximum load:
240 kg (530 lb)
Load is the total weight of cargo, operator, and passengers.

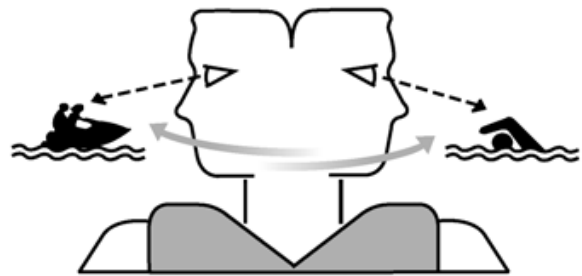
EJU32990

Learning to operate your watercraft

Before operating the watercraft, always perform the pre-operation checks listed on page 55. The short time spent checking the watercraft will reward you with added safety and reliability.

Check state and local laws before operating your watercraft.

Operate defensively at safe speeds and keep a safe distance away from people, objects, and other watercraft. Select a wide area to learn in, where there is good visibility and light boat traffic.



Use the buddy system—operate with someone nearby. Scan constantly for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.

Attach the engine shut-off cord to your left wrist and keep it free from the handlebars so that the engine stops if you, the operator, fall off.

Wear a personal flotation device (PFD). All riders must wear a U.S. Coast Guard approved PFD that is suitable for personal watercraft use.

Wear protective clothing. Severe internal injuries can occur if water is forced into body cavities as a result of falling into the water or being near the jet thrust nozzle. Normal swimwear does not adequately protect against forceful water entry into the rectum and vagina. All riders must wear a wetsuit bottom or clothing that provides equivalent protection. Such clothing includes thick, tightly woven, sturdy and snug-fitting apparel such as denim, but does not include spandex or similar

Operation

fabrics, like those used in bicycle shorts. A full wetsuit can also protect against hypothermia (subnormal body temperature) and abrasions.

Footwear and gloves are recommended.

Eye protection is recommended to keep wind, water, and glare from the sun out of your eyes while you operate your watercraft. Restraining straps for eyewear are made which are designed to float should your eyewear fall in the water.

You should grip the handlebars firmly and keep both feet on the floor of the footwell. Do not attempt to ride with passengers until your operating skills are fully developed.

EJU33050

Riding with passengers

When 2 or 3 persons (including the operator) are on board, the watercraft handles differently, and is not as easy to maneuver, so operating it requires a higher degree of skill. Before attempting to operate the watercraft with passengers on board, the operator must practice operating the watercraft alone enough to be able to acquire the necessary skills.

The passengers must always wear a U.S. Coast Guard approved PFD and a wetsuit bottom or equivalent.

EWJ00540

WARNING

Do not apply throttle when anyone is at the rear of the watercraft. Turn the engine off or keep it at idle. Water and/or debris exiting the jet thrust nozzle can cause severe injury. Passengers should not attempt to board the watercraft if the operator is applying throttle.

Do not give a ride to children whose feet cannot reach the floor of the footwell. The passengers should hold on firmly, either to the person in front of them or to the handgrip pro-

vided, and keep their feet on the floor of the footwell. Never allow a passenger to ride in front of the operator.

EWJ00550

WARNING

When passengers are on board, make sure that they are holding on firmly and have their feet on the floor of the footwell before you start to accelerate.

When pulling a water-skier, the spotter should face to the rear while holding the handgrip with both hands. The spotter should always sit astride the seat with both feet placed firmly on the floor of the footwell for proper balance. Follow state laws regarding water-skiing, such as those for skier-down flags, rearward-facing spotter, and other requirements.

EJU33080

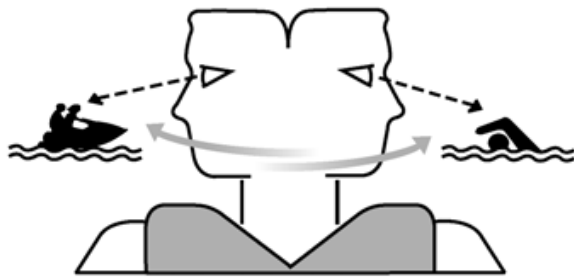
Starting the watercraft

EWJ00710

WARNING

- **Scan constantly for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.**
- **Operate defensively at safe speeds and keep a safe distance away from people, objects, and other watercraft.**
- **Do not follow directly behind watercraft or other boats. Do not go near others to spray or splash them with water. Avoid sharp turns or other maneuvers that make it hard for others to avoid you or understand where you are going. Avoid areas with submerged objects or shallow water.**
- **Take early action to avoid collisions. Remember, watercraft and other boats do not have brakes. Do not release the throttle lever when trying to steer away from objects—you need throttle to steer.**

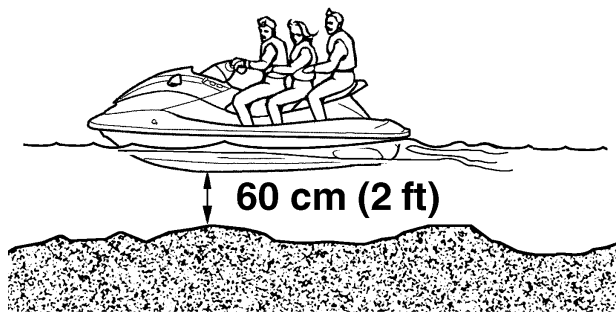
- Practice reboarding in shallow water before riding in deep water.



EJU33091

Boarding and starting in shallow water

- (1) Launch the watercraft in water free from weeds and debris and at least 60 cm (2 ft) deep.



EWJ00570

WARNING

Never operate in water that is less than 60 cm (2 ft) deep, otherwise you increase your chance of hitting a submerged object, which could result in injury.

ECJ00470

CAUTION:

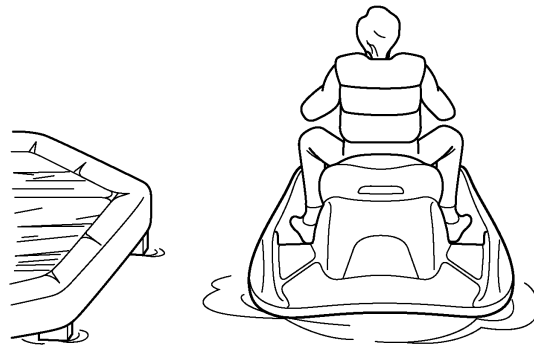
Never operate in water that is less than 60 cm (2 ft) deep, otherwise pebbles or sand could be sucked into the jet intake, causing impeller damage and engine overheating.

- (2) Board the watercraft from the side or the rear.
- (3) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.
- (4) Grip the handlebars with both hands, place both feet on the floor of the footwell, start the engine, and then look in all directions before starting off.

EJU33110

Boarding and starting from a dock

- (1) Board the watercraft from the side.
- (2) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.
- (3) Push the watercraft away from the dock, grip the handlebars with both hands, place both feet on the floor of the footwell, start the engine, and then look in all directions before starting off.



EJU36080

Boarding and starting in deep water

EWJ01110

WARNING

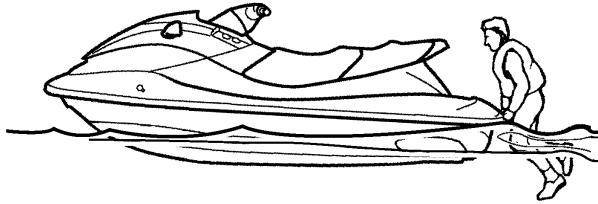
- The operator and passengers should practice boarding in shallow water before riding in deep water. Boarding in deep water requires more skill.
- The fatigue and exposure that could result after unsuccessful attempts to get back on the watercraft may increase the risk of injuries and drowning.

Operation

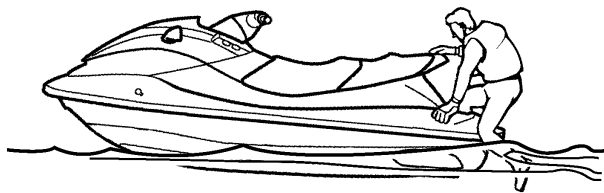
EJU36350

Boarding alone

- (1) Swim to the rear of the watercraft and place both hands on the boarding platform, pull yourself up, and then grasp the handgrip with one hand.



- (2) Pull yourself up to a kneeling position on the platform, and then move to the seat and sit astride.



- (3) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.
- (4) Grip the handlebars with both hands, place both feet on the floor of the footwell,

start the engine, and then look in all directions before starting off.



NOTE:

This watercraft is equipped with a reboarding step, which you can lower to make reboarding easier. The step returns automatically to the up position after you have boarded.

EWJ00610

! WARNING

Before starting off, make sure that there are no boats, swimmers, or obstacles around you.

EJU33162

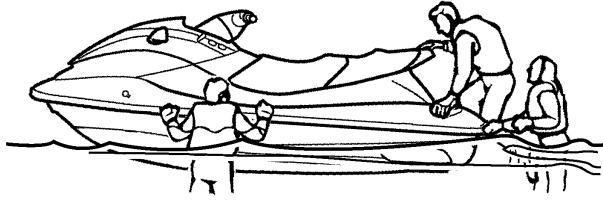
Boarding with passengers

EWJ00660

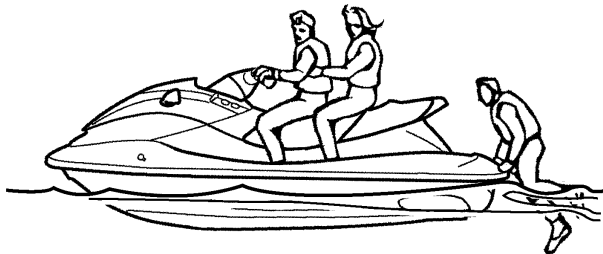
! WARNING

Severe internal injuries can occur if water is forced into body cavities as a result of being near the jet thrust nozzle. Do not apply throttle until the passengers are seated with their feet on the floor of the footwell and are securely holding on to the person in front of them or to the handgrip provided.

- (1) Climb on board as noted in the previous section, and sit astride the seat.



- (2) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.
- (3) Have the passengers move to the rear of the watercraft.



- (4) Have a passenger board and sit astride the seat. If a second passenger is boarding, have him or her follow the same procedure.



NOTE:

When a passenger is boarding, both the passengers and the operator should try to balance the watercraft.

- (5) Check that the passengers have their feet on the floor of the footwell and are securely holding on to the person in front of them or to the handgrip provided. Never allow a passenger to ride in front of the operator.



- (6) Start the engine, look in all directions, and then accelerate to planing speed.

EWJ00610

! WARNING

Before starting off, make sure that there are no boats, swimmers, or obstacles around you.

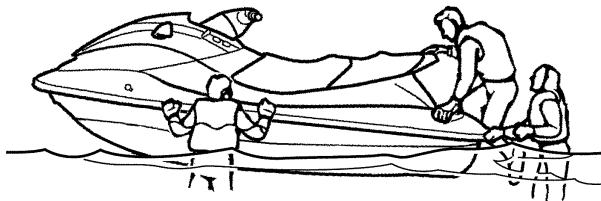
NOTE:

The heavier the total weight of the operator and passengers, the more difficult it will be to balance the watercraft. Do not operate the watercraft when the total weight exceeds 240 kg (530 lb) including any cargo. If it is difficult to balance the watercraft at a standstill, proceed as follows:

- (1) While the passengers are steadying the watercraft, pull yourself up onto the boarding platform into a kneeling posi-

Operation

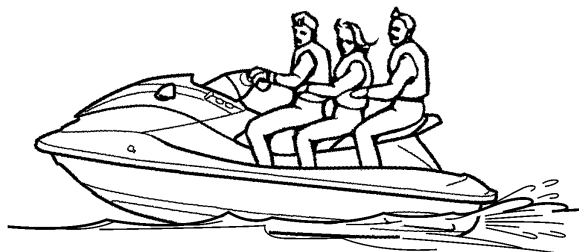
tion, and then move to the seat and sit astride to balance the watercraft.



- (2) Have a passenger pull him or herself up onto the boarding platform into a kneeling position, then move to the seat and sit astride to balance the watercraft.
- (3) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.
- (4) Start the engine and keep it at idle.
- (5) Have the second passenger pull him or herself up onto the boarding platform into a kneeling position, then crawl onto the seat as the watercraft accelerates.



- (6) Gradually increase the speed to balance the watercraft.



EJU33230

Capsized watercraft

If the watercraft capsizes, turn it over immediately.

Be sure to carefully follow the procedures below to prevent injury, or damage to the watercraft.

EWJ00670

WARNING

IMPROPER UPRIGHTING CAN CAUSE INJURY:

- Be sure to shut the engine off by pulling on the engine shut-off cord to remove the clip from the engine shut-off switch.
- Do not put your hands in the intake grate.

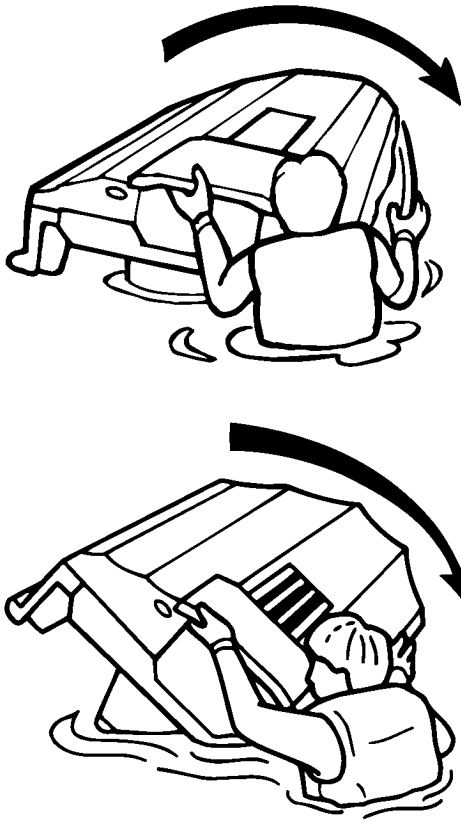
ECJ00530

CAUTION:

If the watercraft capsizes, release the throttle lever immediately. Oil could flow into the air filter case and the engine could be damaged.

- (1) Remove the clip from the engine shut-off switch.
- (2) Swim to the rear of the watercraft. Pull the watercraft over with your left hand on the

ride plate while pushing down on the gunwale with your right hand or foot.



NOTE: _____

If the port (left) side of the capsized watercraft is tilting up, push down on the gunwale so that the port (left) side is down before turning the watercraft clockwise.

ECJ00540

CAUTION: _____

Do not turn the watercraft over counter-clockwise, otherwise water can enter the engine, which can result in severe damage.

- (3) Start the engine and operate the watercraft to discharge any water remaining in the engine compartment. (If the engine does not start, see "Towing the watercraft" on page 101 or "Submerged watercraft" on page 101.)

ECJ00550

CAUTION: _____

Do not operate the engine at full throttle for at least 1 minute after the engine has been restarted. Excessive water in the bilge can splash into the engine, which can result in severe damage.

NOTE: _____

To efficiently discharge water from the engine compartment, operate the watercraft as straight as possible and above planing speed for at least 2 minutes.

EJU33250

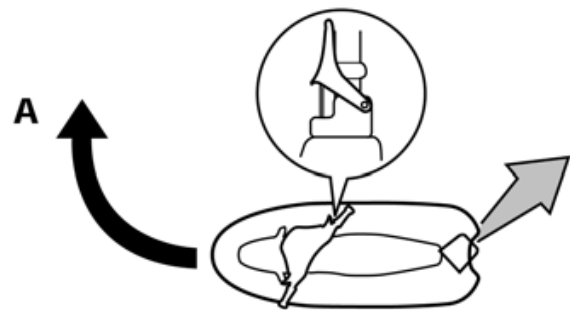
Turning the watercraft

Steering control depends on the combination of handlebar position and the amount of throttle.

Water sucked in through the intake grate is pressurized by the impeller in the jet pump. As the pressurized water is expelled from the pump through the jet thrust nozzle, it creates thrust to move and steer the watercraft. The higher the engine speed, the more thrust produced.

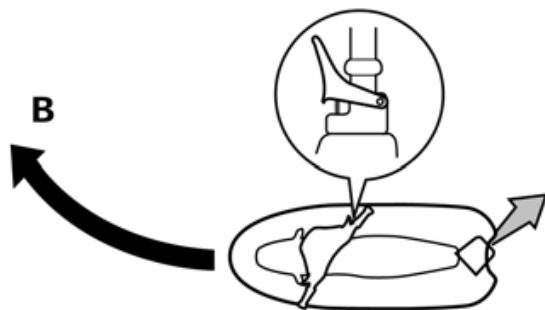
The amount of jet thrust, in addition to the position of the handlebars, determines how sharply you turn.

- A. More throttle produces higher thrust, so the watercraft will turn more sharply.



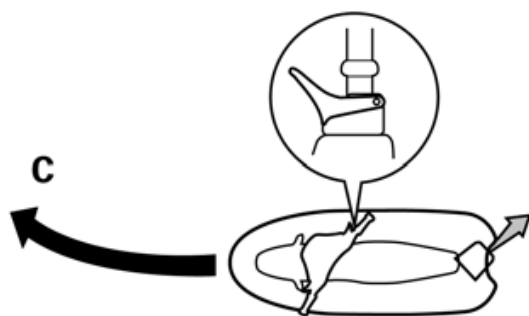
Operation

- B. Less throttle produces lower thrust, so the watercraft will turn more gradually.

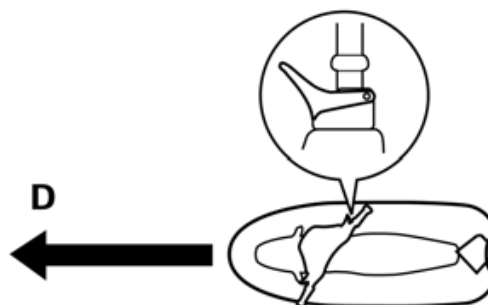


- C. Releasing the throttle lever completely produces only minimum thrust. If you are traveling at speeds above trolling, you will have rapidly decreasing ability to steer without throttle. You may still have some turning ability immediately after releasing the throttle lever, but once the engine slows down, the watercraft will no longer respond to handlebar input until you apply throttle again or you reach trolling speed.

At trolling speed, the watercraft can be turned gradually by handlebar position alone using just the amount of thrust available at idle.



- D. If the engine is stopped while riding, there is no thrust. The watercraft will go straight even though the handlebars are turned.



You need throttle to steer.

EWJ00770

WARNING

- **Do not release the throttle lever when trying to steer away from objects—you need throttle to steer. A collision could result in severe injury or death.**
- **When operating at higher speeds, make gradual turns or slow down before turning. Sharp high-speed turns may cause the watercraft to slide sideways or spin, throwing the operator and passengers overboard, which could cause an injury.**

This model is equipped with the Yamaha Engine Management System (YEMS) that includes an off-throttle steering (OTS) system. It will activate at planing speeds should you attempt to steer the watercraft after releasing the throttle lever (see condition C above).

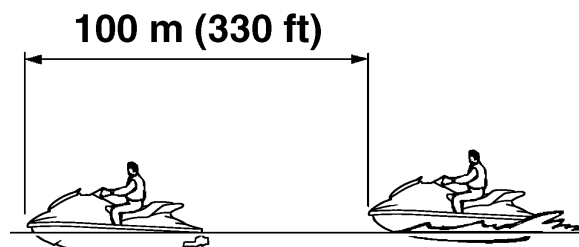
The OTS system assists in turning by continuing to supply some thrust while the watercraft is decelerating, but you can turn more sharply if you apply throttle while turning the handlebars. The OTS system does not function below planing speeds or when the engine is off. Once the engine slows down, the watercraft will no longer turn in response to handlebar in-

put until you apply throttle again or you reach trolling speed.

EJU33290

Stopping the watercraft

The watercraft is not equipped with a separate braking system. It is stopped by water resistance when the throttle lever is released. From full speed, the watercraft comes to a complete stop in approximately 100 m (330 ft) after the throttle lever is released or the engine is stopped, although this distance will vary depending on many factors, including gross weight, water surface conditions, and wind direction. The watercraft slows down as soon as the throttle lever is released, but will coast for a distance before fully stopping. If you are not sure you can stop in time before hitting an obstacle, apply throttle and turn in another direction.



EWJ00740

WARNING

- Allow adequate stopping distance.
- Take early action to avoid collisions. Remember, watercraft and other boats do not have brakes.
- Operate defensively at safe speeds and keep a safe distance away from people, objects, and other watercraft to give you time to stop.
- Do not shut the engine off when slowing down in case you need engine power to

steer away from a boat or other obstacle that comes into your path.

- Do not use the reverse function to slow down or stop the watercraft as it could cause you to lose control, be ejected, or impact the handlebars.

EJU35960

Beaching the watercraft

- (1) Make sure that there are no boats, swimmers, or obstacles near the beach. Release the throttle lever about 100 m (330 ft) before you reach the intended beaching area.
- (2) Approach the beach slowly and stop the engine before reaching land. Remember, you need throttle to steer.
- (3) Get off the watercraft and pull it up on the beach.

ECJ00490

CAUTION:

Small pebbles, sand, seaweed, and other debris can be sucked into the jet intake and impair or damage the impeller. Always stop the engine and get off the watercraft before beaching it.

EJU36060

Docking the watercraft

- (1) Make sure that there are no boats, swimmers, or obstacles near the watercraft. Reduce speed about 100 m (330 ft) away from the dock.
- (2) Slowly approach the dock and stop the engine just before coming alongside it.

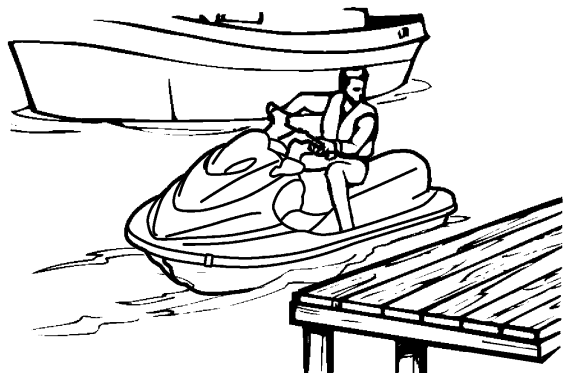
EJU33320

Reverse on waterways

Reverse can be used for slow-speed maneuvering when it is necessary to back up out of tight spots where you cannot turn around. Reverse can be used to slow down or stop only during slow-speed maneuvering, such as when docking.

Operation

Once the engine is idling, shift into reverse and gradually increase engine speed. Make sure that there are no obstacles or people behind you before shifting into reverse.



EJU33350

Rough water operation

The force of landing after jumping can cause a strong impact on both the watercraft and the operator and passengers. It is possible for the operator to hit his or her chest or jaw on the watercraft or handlebars and be injured. The passengers could also impact the watercraft and be injured.

Do not operate the watercraft with your chin right above the handlebars. In addition, the operator and passengers should keep their feet on the floor of the footwell.

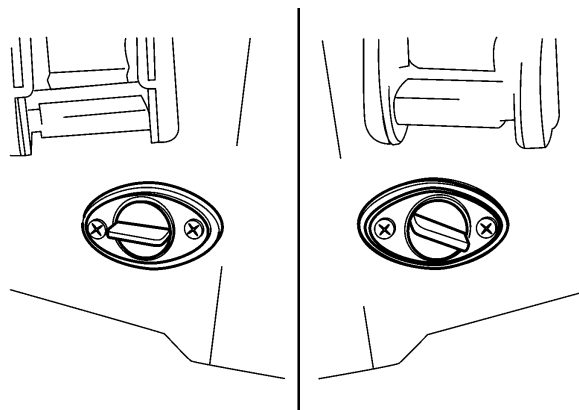
Operating in rough water or jumping waves can also crack the watercraft hull and deck, and damage internal parts. Avoid operating in rough water or bad weather conditions.

EJU33391

Post-operation care

To keep your watercraft in top shape, always take it out of the water after using it and perform the following procedures. Leaving the watercraft in the water for extended periods will accelerate the rate of normal deterioration of the jet unit components and hull finish. Marine organisms and corrosion are some of the conditions that can adversely affect the life of many watercraft components.

- (1) Remove the watercraft from the water.
- (2) Wash down the hull, handlebars, and jet unit with fresh water.
- (3) Remove the seat and check the engine compartment for water. To drain excess water, remove the stern drain plugs, and then raise the bow of the watercraft enough to allow the water in the bilge to drain out.



NOTE:

This watercraft is equipped with a jet vacuum bilge draining system and an electric bilge draining system that remove water from the engine compartment while you are underway. However, some residual water will remain. (See page 58 for bilge draining procedures.)

- (4) Place the watercraft in a horizontal position.

- (5) Flush the cooling system to prevent it from clogging with salt, sand, or dirt. (See page 79 for flushing procedures.)
- (6) Drain residual water from the exhaust system by alternately squeezing and releasing the throttle lever for 10 to 15 seconds while the engine is running.

ECJ00561

CAUTION:

Do not run the engine for more than 15 seconds without supplying water, otherwise the engine could overheat.

- (7) If the watercraft will be stored for a week or more, lubricate internal engine components to help prevent corrosion. (See page 80 for lubrication procedures.)
- (8) Rinse the engine and engine compartment with a small amount of water.

ECJ00570

CAUTION:

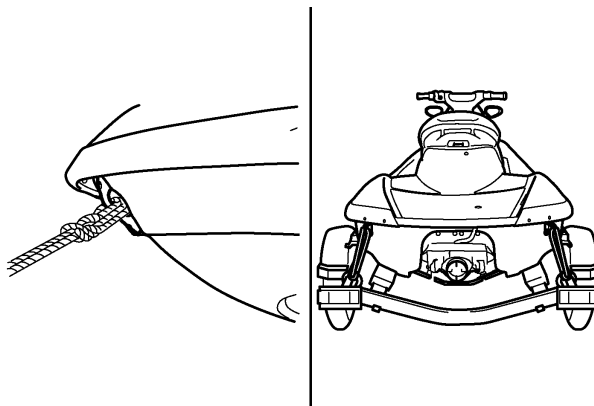
Do not use high-pressure water when rinsing the engine or engine compartment as severe engine damage could result.

- (9) Wipe the engine and engine compartment dry with a clean cloth (repeat step 3, if necessary).
- (10) Wipe the hull, handlebars, and jet unit dry with a clean cloth.
- (11) Spray a rust inhibitor, such as Yamaha Silicone Protectant and Lubricant, on metallic parts to minimize corrosion.
- (12) Allow the engine compartment to air dry completely before installing the seat.

EJU33461

Transporting

When transporting the watercraft on a trailer, secure the tie downs to the trailer through the bow eye and stern eyes.



ECJ00641

CAUTION:

- Do not attach ropes or tie downs to any part of the watercraft other than the bow eye and stern eyes to secure the watercraft to the trailer. Otherwise, the watercraft may be damaged.
- Do not route ropes or tie downs over the seat, as they may leave permanent marks on the seat's surface. Also, wrap the ropes or tie downs with towels or rags where they touch the body of the watercraft to avoid scratches or damage.
- Before putting the watercraft on the trailer or transporting it, be sure to put the shift lever in the forward position, otherwise the reverse gate may hit an obstacle, which may cause damage.

Maintenance and care

EJU33490

Storage

EWJ00330

WARNING

Always place the watercraft upright in a horizontal position when storing it, otherwise fuel could leak out into the engine or engine compartment, which could create a fire hazard.

Storage for long periods of time, such as winter storage, requires preventive maintenance to ensure against deterioration. It is advisable to have the watercraft serviced by a Yamaha dealer prior to storage. However, the following procedures can be performed by the owner.

EJU33532

Flushing the cooling system

Flushing the cooling system is essential to prevent it from clogging with salt, sand, or dirt.

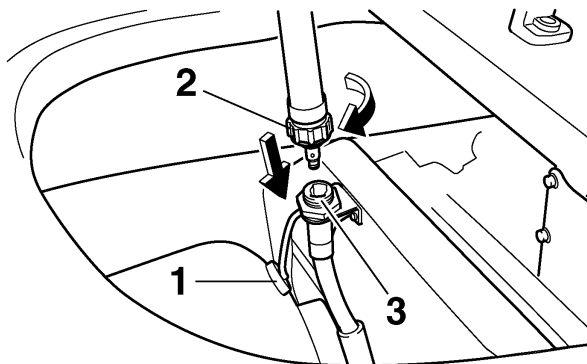
ECJ00121

CAUTION:

- Do not supply water to the cooling water passages when the engine is not running. The water could flow back through the muffler into the crankcase, causing severe engine damage.
- Do not run the engine for more than 15 seconds without supplying water or over 4000 r/min on land, otherwise the engine could overheat.

- (1) Place the watercraft in a horizontal position.
- (2) Remove the rear seat and seat storage compartment. (See page 28 for seat removal and installation procedures.)
- (3) Remove the flushing hose connector cap, and then insert the garden hose

adapter into the flushing hose connector and turn it until it is securely connected.



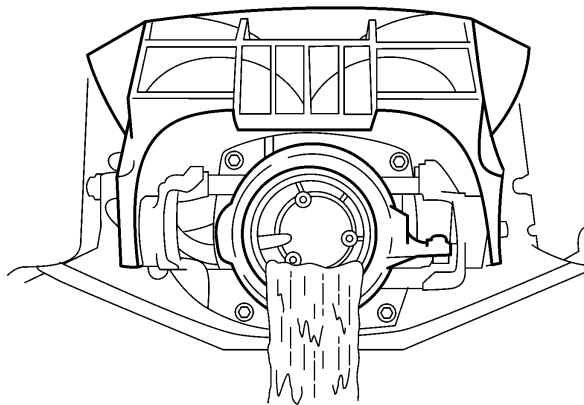
- 1 Flushing hose connector cap
- 2 Garden hose adapter
- 3 Flushing hose connector

- (4) Connect the garden hose adapter to a water tap using a garden hose.

NOTE:

A garden hose is not included and must be purchased separately.

- (5) Start the engine, and then immediately turn the water supply on until water flows out continually from the jet thrust nozzle.



- (6) Run the engine at idling speed for about 3 minutes watching the engine condition. If the engine stops while flushing, turn the water supply off immediately and repeat the above steps.
- (7) Turn the water supply off, and then force the remaining water out of the cooling

water passages by alternately squeezing and releasing the throttle lever for 10 to 15 seconds.

- (8) Stop the engine.
- (9) Remove the garden hose adapter and install the flushing hose connector cap.

EJU33592

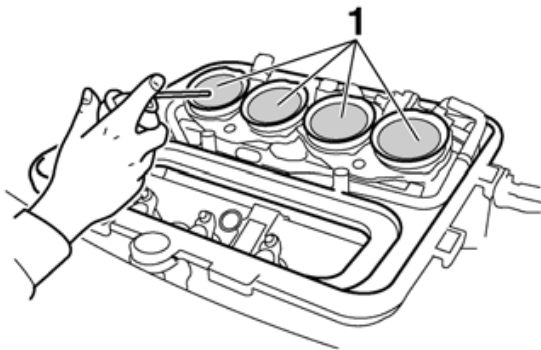
Lubrication

EWJ00260

WARNING

Do not spray flammable rust inhibitor products on engine surfaces while the engine is hot. The sprayed substance or propellants could catch fire.

- (1) Remove the seats. (See page 28 for seat removal and installation procedures.)
- (2) Remove the air filter case cover and the air filter element. (See page 87 for air filter case cover and air filter element removal and installation procedures.)
- (3) Spray a rust inhibitor such as Yamaha Stor-Rite Engine Fogging Oil into each intake opening for 3 seconds.



1 Intake opening

- (4) Install the air filter element in the air filter case, and then install the air filter case cover.
- (5) Start the engine in a well-ventilated area and let it run at idle for 15 seconds.

ECJ00561

CAUTION:

Do not run the engine for more than 15 seconds without supplying water, otherwise the engine could overheat.

- (6) Lubricate all cables such as the throttle and steering cables.

NOTE:

Use a Yamaha Power Cable Luber and Yamaha Lube-Zall to pressure-lubricate the cables and purge out any moisture between the inner and outer cables.

- (7) Lubricate the areas of the watercraft specified in "Lubrication points" on page 91.

EJU33660

Fuel system

EWJ00280

WARNING

GASOLINE AND ITS VAPORS ARE HIGHLY FLAMMABLE AND EXPLOSIVE!

- Do not smoke when refueling, and keep away from sparks, flames, and other sources of ignition.
- Stop the engine before refueling.
- Refuel in a well-ventilated area with the watercraft in a horizontal position.
- Do not stand or sit on the watercraft while refueling in case of fire.
- Take care not to spill gasoline. If gasoline spills, wipe it up immediately with dry rags. Always properly dispose of gasoline-soaked rags.
- Avoid overfilling the fuel tank. Stop filling when the fuel level reaches approximately 50 mm (2 in) from the top of the fuel tank. Fuel expands as it warms up and could overflow if the fuel tank has been overfilled. If temporarily leaving the watercraft with a full fuel tank, do not

Maintenance and care

leave it in direct sunlight. Leave it in a well-ventilated area with the watercraft in a horizontal position.

- Tighten the fuel tank filler cap securely after refueling.
- If you should swallow some gasoline, inhale a lot of gasoline vapor, or get gasoline in your eyes, get immediate medical attention.
- If any gasoline spills on your skin or clothing, immediately wash the affected area with soap and water and change your clothes.

Top off the fuel tank with fresh gasoline and add one ounce of Yamaha Fuel Stabilizer and Conditioner per each gallon of fuel.

EJU33680

Battery

If the watercraft will not be used for more than a month, remove the battery from the watercraft and store it in a cool, dry place.

- (1) Disconnect the negative (–) battery lead first, then the positive (+) battery lead and breather hose, and then remove the battery from the watercraft.
- (2) Clean the battery casing using fresh water.
- (3) If the battery terminals are dirty or corroded, clean them with a wire brush.
- (4) Fully charge the battery.
- (5) Apply Yamaha Marine Grease or Yamaha Grease A to the battery terminals, and then store the battery in a cool, dry place.
- (6) Check the battery at least once every 2 months and fully charge it if necessary.

ECJ00100

CAUTION:

Always keep the battery charged. Storing a discharged battery can cause permanent battery damage.

To check the condition of the battery, check the specific gravity of the electrolyte or measure the voltage at both battery terminals. Charge the battery if the voltage is less than 12 volts.

Specific gravity (for reference):
1.28 at 20 °C (68 °F)

It is recommended to have a Yamaha dealer check the specific gravity and charge the battery. If you maintain the battery yourself, be sure to read and follow the instructions provided with the battery tester and charger you use.

EJU33740

Cleaning the watercraft

Clean the watercraft before storing it for a long period.

- (1) Wash down the hull, handlebars, and jet unit with fresh water.
- (2) Rinse the engine and bilge area with fresh water. Drain all of the water and wipe up any remaining moisture with clean, dry rags.

ECJ00110

CAUTION:

Do not use high-pressure water when rinsing the engine and bilge area as severe engine damage could result.

- (3) Spray the engine's exterior with a rust inhibitor and lubricant such as Yamaha Silicone Protectant and Lubricant.
- (4) Wax the hull with a non-abrasive wax such as Yamaha Silicone Wax.
- (5) Wipe all vinyl and rubber components, such as the seat and engine compartment seals, with a vinyl protectant such as Yamaha Protectant.

EJU33751

Maintenance and adjustments

Periodic inspection, adjustment, and lubrication will keep your watercraft in the safest and most efficient condition possible. Safety is an obligation of the watercraft owner. Proper maintenance must be carried out to keep the exhaust emission and sound levels within the regulated limits. The most important points of watercraft inspection, adjustment, and lubrication are explained on the following pages.

See a Yamaha dealer for genuine Yamaha replacement parts and optional accessories designed for your watercraft.

Remember, failures that are the result of the installation of parts or accessories which are not qualitatively equivalent to genuine Yamaha parts are not covered by the limited warranty.

Maintenance, replacement, or repair of the emission control devices and system may be performed by any marine SI engine repair establishment or individual. Warranty repair, however, must be performed at an authorized Yamaha marine dealership.

EWJ00310

WARNING

- **Be sure to shut the engine off when you perform maintenance unless otherwise specified, otherwise an accident or injury could result from unexpected operation, moving parts, or electric shock. If the owner is not familiar with watercraft servicing, this work should be done by a Yamaha dealer. Improperly serviced components could fail or stop operating correctly, which could result in an accident.**
- **Modifications to this watercraft not approved by Yamaha may cause loss of performance or excessive noise and exhaust emissions, or render it unsafe for**

use. Consult a Yamaha dealer before attempting any modifications.

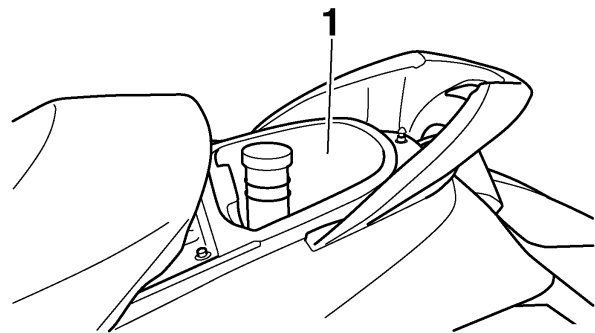
NOTE:

A service manual is available for purchase through a Yamaha dealer for owners who have the mechanical skills, tools, and other equipment necessary to perform maintenance not covered by this owner's/operator's manual.

EJU33800

Owner's/operator's manual and tool kit

It is advisable to always carry the owner's/operator's manual and tool kit with you whenever you use the watercraft. For your convenience, a storage compartment is provided on the watercraft for the manual and tool kit.



1 Storage compartment

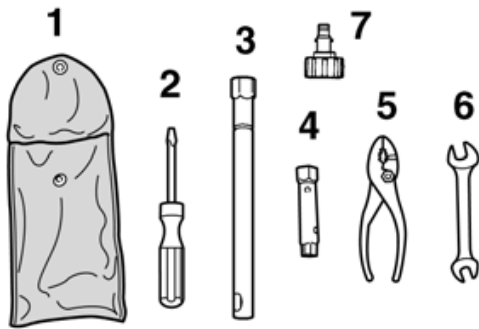
NOTE:

To protect these materials from water damage, it would be a good idea to put them in a waterproof bag. If your owner's/operator's manual is damaged, order a replacement from a Yamaha dealer.

The service information included in this manual is intended to provide you, the owner, with the necessary information for completing your own preventive maintenance and minor re-

Maintenance and care

pairs. The tools provided in the tool kit are sufficient for this purpose, except that a torque wrench may also be necessary to tighten nuts and bolts.



- 1 Tool bag
- 2 Screwdriver
- 3 16 mm box wrench
- 4 10/12 mm box wrench
- 5 Pliers
- 6 Open-end wrench
- 7 Garden hose adapter

Maintenance and care

EJU33821

Periodic maintenance chart

The following chart gives general guidelines for periodic maintenance. However, maintenance may need to be performed more frequently depending on your operating conditions.

This “●” mark indicates maintenance that you may do yourself.

This “○” mark indicates work to be done by a Yamaha dealer.

Item	Operation	Initial			Thereafter every		Page
		10 hours	50 hours	100 hours	100 hours	200 hours	
			6 months	12 months	12 months	24 months	
Spark plugs	Check, clean, adjust	●		●	●		90
Lubrication points	Lubricate			●/○	●/○		91
QSTS cables	Lubricate			○	○		—
Intermediate housing	Lubricate	○		●	●		91
Fuel system	Check			○	○		86
Fuel tank	Check, clean			●/○	●/○		86
Trolling speed	Check, adjust			●/○	●/○		94
Throttle shaft	Check			○	○		—
Cooling water passages	Flush	●*					79
Water inlet strainer	Check, clean			○	○		—
Bilge strainer	Clean			○	○		—
Electric bilge pump strainer	Check, clean			○	○		—
Impeller	Check			○	○		—
Jet thrust nozzle angle	Check, adjust			●/○	●/○		88
Steering master	Check	○		○	○		—
QSTS mechanism	Check, adjust	○		○	○		—
Shift cable and reverse gate	Check, adjust			●/○	●/○		88
Throttle cable	Check, adjust	○		●	●		88
Stern drain plugs	Check, replace			○	○		59
Battery	Check, charge			●/○	●/○		92
Rubber coupling	Check					○	—

Maintenance and care

Item	Operation	Initial			Thereafter every		Page
		10 hours	50 hours	100 hours	100 hours	200 hours	
			6 months	12 months	12 months	24 months	
Engine mount	Check					○	—
Nuts and bolts	Check	○		○	○		—
Air filter element	Check			●	●		87
Engine oil	Replace	○		○	○		86
Oil filter	Replace			○	○		86
Valve clearance	Check, adjust					○	—

* This operation should be performed after every use.

EJU34210

Checking the fuel system

EWJ00380

WARNING

Gasoline is highly flammable and explosive. Failure to check for and repair any fuel leakage could result in a fire or explosion. A fire or explosion can cause severe injury or death. Shut the engine off. Do not smoke. Avoid spilling gasoline.

Fuel in the fuel lines is pressurized.

Fuel can spray out and cause injury or a fire hazard if a fuel line is disconnected.

Do not run the engine with a fuel line disconnected.

Check the fuel system for leaks, cracks, and malfunctions. If any problem is found, consult a Yamaha dealer.

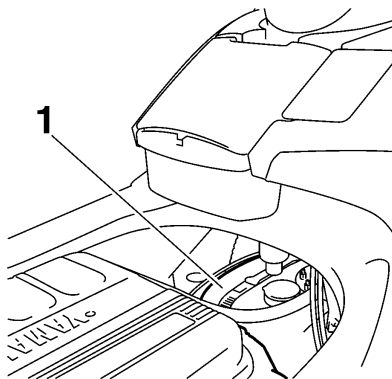
Check:

- Fuel tank filler cap and seal for damage.
- Fuel in fuel tank for water and dirt.
- Fuel tank for damage, cracks, and leakage.
- Fuel hoses and joints for damage, cracks, and leakage.
- Air bleeding passages for leakage.

EJU34230

Fuel tank

Check the fuel tank for leakage and for water in the tank. If water is found in the fuel system, or if the fuel tank needs to be cleaned, have a Yamaha dealer service the watercraft.



1 Fuel tank

EJU34281

Engine oil and oil filter

EWJ00340

WARNING

Engine oil is extremely hot immediately after the engine is turned off. Coming in contact with or getting any engine oil on your clothes could result in burns.

ECJ00180

CAUTION:

- Do not run the engine with too much or not enough oil in the oil tank. Oil could spray out and the engine could be damaged.
- Be sure to change the engine oil after the first 10 hours of operation, and every 100 hours thereafter or at the start of a new season, otherwise the engine will wear quickly.

The oil filter should be replaced every year or every 100 hours of operation. Have a Yamaha dealer replace the oil filter if necessary.

It is recommended to have a Yamaha dealer change the engine oil. However, if you choose to change the oil on your own, refer to the service manual for this watercraft.

NOTE:

Dispose of used oil according to local regulations.

Recommended engine oil:

SAE 10W-30

Oil grade:

API SE, SF, SG, SH, SJ, SL

Oil quantity:

With oil filter replacement:

2.3 L (2.43 US qt) (2.02 Imp. qt)

Without oil filter replacement:

2.1 L (2.22 US qt) (1.85 Imp. qt)

Total amount:

4.5 L (4.76 US qt) (3.96 Imp. qt)

Maintenance and care

ECJ00190

CAUTION:

If oil is leaking or the oil pressure warning indicator comes on when the engine is running, immediately shut the engine off and have a Yamaha dealer check the watercraft. Continuing to operate the engine under such conditions could cause severe engine damage.

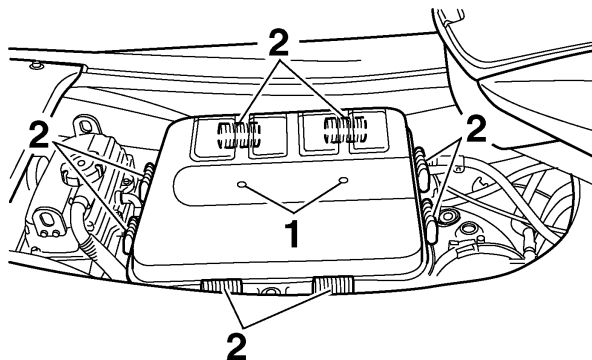
EJU34300

Checking the air filter element

The air filter element should be checked every 12 months or every 100 hours of operation.

To check the air filter element:

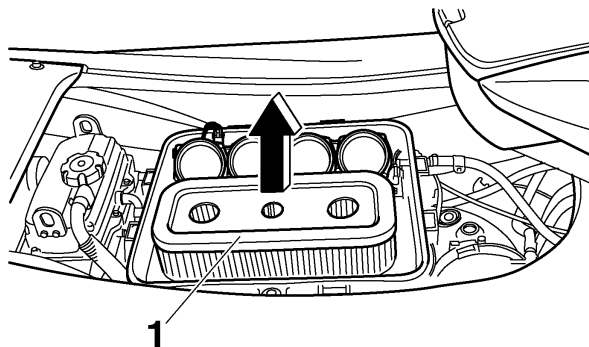
- (1) Remove the seats. (See page 28 for seat removal and installation procedures.)
- (2) Remove the air filter case cover screws, slide the locks open, and then remove the air filter case cover.



- 1 Air filter case cover screw
2 Lock

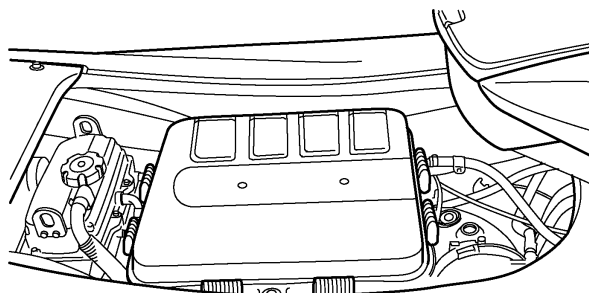
- (3) Remove the air filter element and check it for dirt and oil. Replace the air filter ele-

ment if there is any oil buildup, or every 2 years or every 200 hours of operation.



- 1 Air filter element

- (4) Install the air filter element in the air filter case, and then install the air filter case cover.



- (5) Install the seats.

ECJ00200

CAUTION:

- Make sure that the air filter element is installed in the air filter case properly.
- Do not start the engine with the air filter element removed, otherwise the pistons and cylinders could be damaged.
- If cleaning the air filter element, use cold or lukewarm water and let it air dry completely. Do not use detergent or solvent to clean the air filter element, or dry it with hot or compressed air, otherwise it could be damaged.

Maintenance and care

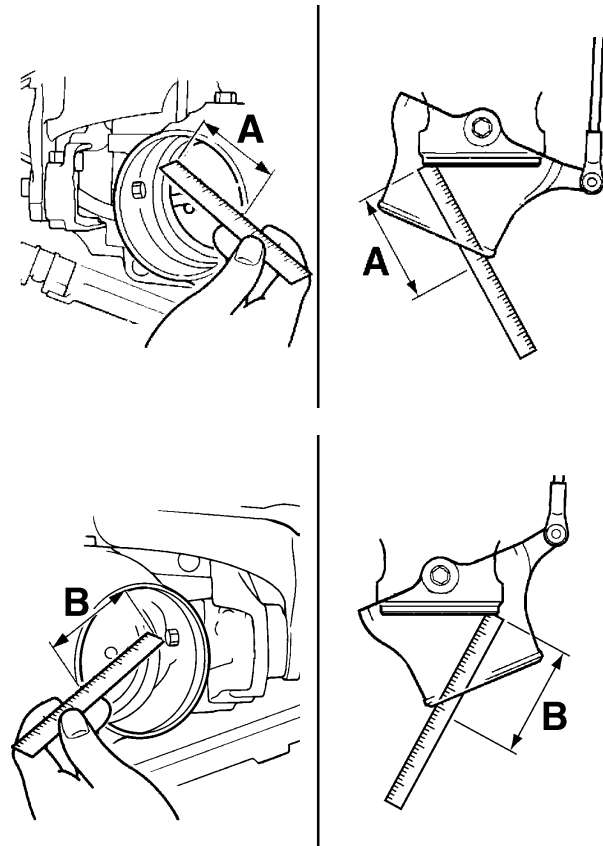
EJU34321

Checking the jet thrust nozzle angle

Check the handlebars and jet thrust nozzle for smooth operation.

Turn the handlebars as far as possible to the right and left and check that the difference of distances A and B between the jet thrust nozzle and the nozzle is within specification.

Difference of A and B:
Maximum 5 mm (0.20 in)



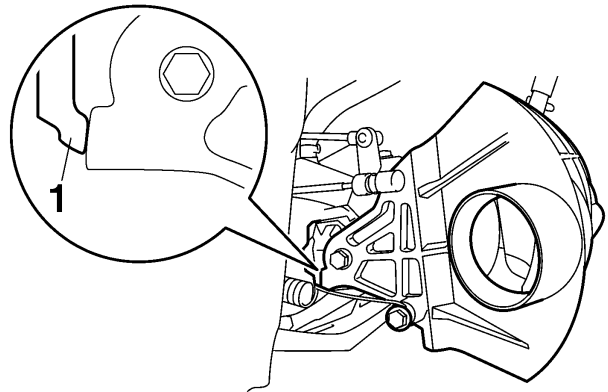
If the steering is stiff or misadjusted, have a Yamaha dealer service it.

EJU36590

Checking the shift cable

Place the shift lever in the reverse position.

Make sure that the reverse gate makes contact with the stopper.



1 Stopper

If the reverse gate does not make contact with the stopper, have a Yamaha dealer service it.

EJU36560

Checking and adjusting the throttle cable

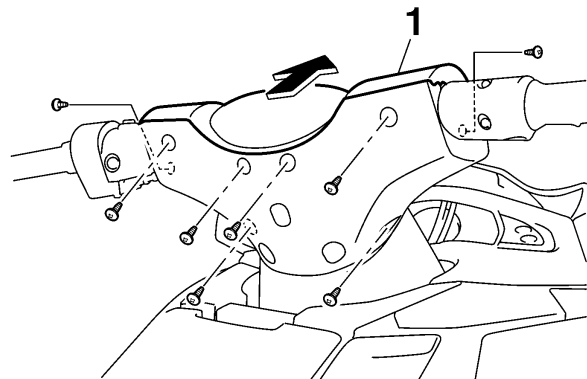
Check that the throttle cable moves back to the set position smoothly and that the throttle lever free play is within specification.

Squeeze and release the throttle lever. If the throttle lever does not return smoothly, have a Yamaha dealer service it.

If the specified throttle lever free play cannot be obtained as described below, have a Yamaha dealer make the adjustment.

FX High Output

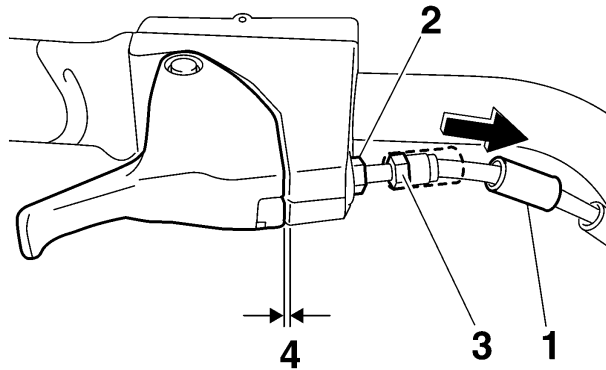
- (1) Remove the eight screws, and then remove the front handlebar cover.



1 Front handlebar cover

Maintenance and care

- (2) Slide the rubber cover away from the adjuster, and then loosen the locknut.
- (3) Adjust the free play by turning the adjuster.



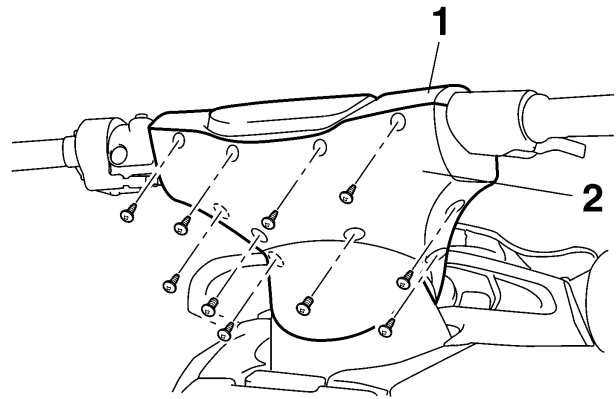
- 1 Rubber cover
- 2 Locknut
- 3 Adjuster
- 4 Throttle lever free play

Throttle lever free play:
4.0–7.0 mm (0.16–0.28 in)

- (4) Hold the adjuster with one wrench while tightening the locknut with another wrench. Slide the rubber cover to its original position.
- (5) Install the front handlebar cover, and then install the eight screws.

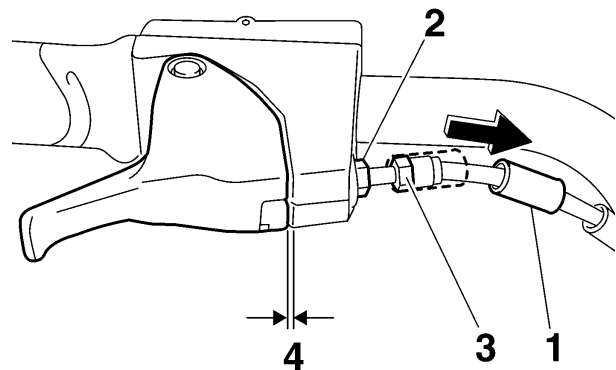
FX Cruiser High Output

- (1) Remove the ten screws, and then remove the front and rear handlebar covers.



- 1 Front handlebar cover
- 2 Rear handlebar cover

- (2) Slide the rubber cover away from the adjuster, and then loosen the locknut.
- (3) Adjust the free play by turning the adjuster.

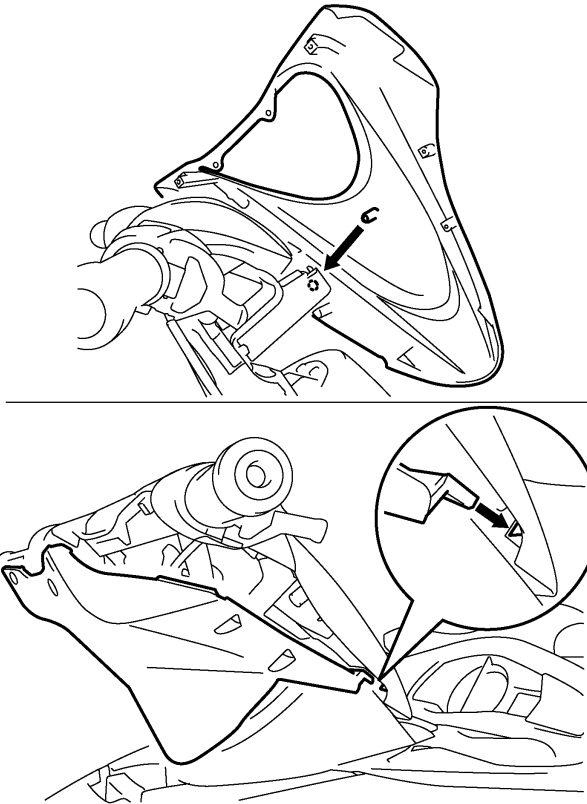


- 1 Rubber cover
- 2 Locknut
- 3 Adjuster
- 4 Throttle lever free play

Throttle lever free play:
4.0–7.0 mm (0.16–0.28 in)

- (4) Hold the adjuster with one wrench while tightening the locknut with another wrench. Slide the rubber cover to its original position.

- (5) Install the front and rear handlebar covers as shown in the illustration, and then install the ten screws.



EJU34381

Cleaning and adjusting the spark plugs

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something about the condition of the engine. For example, if one spark plug has a distinctly different color, the engine could require servicing. Do not attempt to diagnose any problems yourself. Have a Yamaha dealer service the watercraft. Remove and inspect the spark plugs periodically; heat and deposits will cause the spark plugs to slowly break down and erode. If electrode erosion becomes excessive, or if carbon and other deposits are excessive, replace the spark plug with the specified plug.

Specified spark plug:
CR9EB

To remove a spark plug:

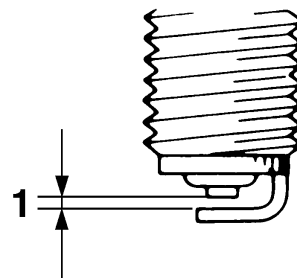
- (1) Remove the air filter case cover and air filter element. (See page 87 for air filter element removal and installation procedures.)
- (2) Remove the spark plug cap.

ECJ00210

CAUTION:

Do not use any tools to remove or install the spark plug cap, otherwise the ignition coil coupler could be damaged. The spark plug cap may be difficult to remove because the rubber seal on the end of the cap fits tightly. To remove the spark plug cap, simply twist it back and forth while pulling it up; to install it, twist it back and forth while pushing it down.

- (3) Remove the spark plug.
Measure the spark plug gap with a wire thickness gauge. Replace the spark plug or adjust the gap to specification if necessary.



1 Spark plug gap

Spark plug gap:
0.7–0.8 mm (0.028–0.031 in)

To install a spark plug:

- (1) Clean the gasket surface.
- (2) Wipe any dirt from the threads of the spark plug.

Maintenance and care

- (3) Install the spark plug, and then tighten it to the specified torque.

Spark plug tightening torque:
12.5 Nm (9.2 ft-lb) (1.27 kgf-m)

- (4) Install the spark plug cap.

NOTE:

- Wipe off any water on the spark plug or inside the spark plug cap before installing the cap. Push the spark plug cap down until it is securely installed.
- If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 turn to 1/2 turn past finger tight using the spark plug wrench included in the tool kit. Have the spark plug adjusted to the correct torque with a torque wrench as soon as possible.

EWJ00350

WARNING

Be careful not to damage the insulator when removing or installing a spark plug. A damaged insulator could allow sparks to escape, which could result in a fire or explosion.

- (5) Install the air filter element in the air filter case, and then install the air filter case cover.

EJU34433

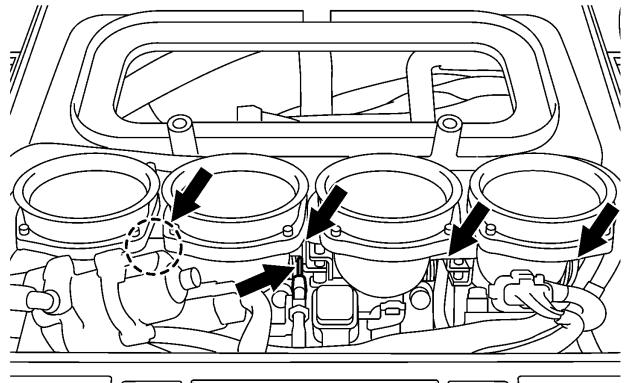
Lubrication points

To keep moving parts sliding or rotating smoothly, coat them with water-resistant grease.

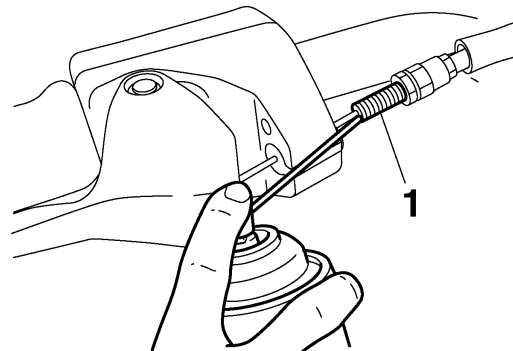
Recommended water-resistant grease:
Yamaha Marine Grease/Yamaha Grease A

- Throttle cable (throttle body end)

- Throttle bodies (throttle cable pulley, throttle cam, and return spring)

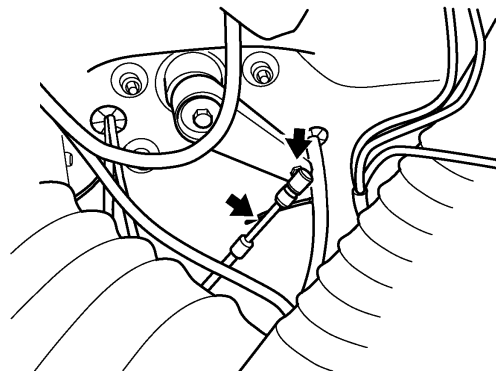


- Throttle cable (handlebar end)
Loosen the adjuster and disconnect the outer cable from the bracket. Spray a rust inhibitor into the outer cable. Connect the outer cable, and then adjust the throttle cable free play. (See page 88 for adjustment procedures.)



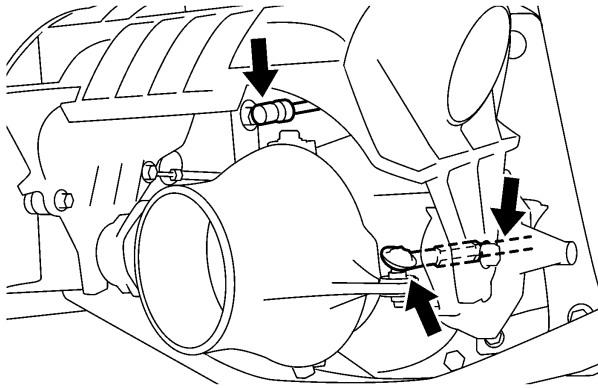
1 Adjuster

- Steering cable (handlebar end)

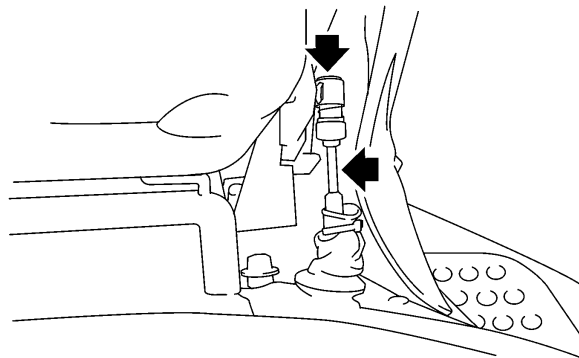


Maintenance and care

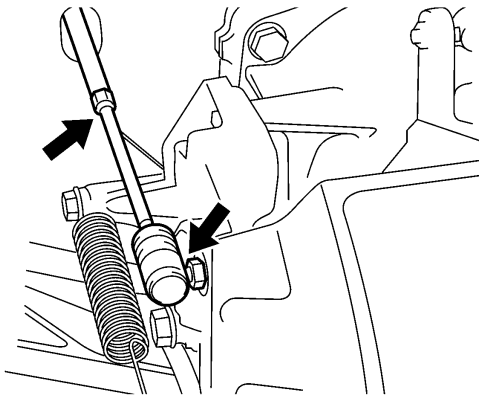
- Steering cable (jet thrust nozzle end)
- QSTS rod (jet thrust nozzle end)



- Shift cable (shift lever end)



- Shift cable (reverse gate end)



- Intermediate housing
Fill the intermediate housing with water-resistant grease through the grease nipple using a grease gun.

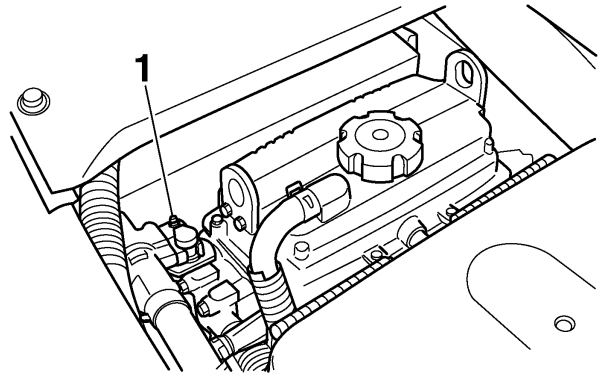
Grease quantity:

Initial 10 hours or 1 month:

33.0–35.0 cm³ (1.12–1.18 US oz)
(1.16–1.23 Imp.oz)

Every 100 hours or 12 months:

6.0–8.0 cm³ (0.20–0.27 US oz)
(0.21–0.28 Imp.oz)



1 Grease nipple

EJU34451

Checking the battery

Check the level of the battery electrolyte and make sure that the negative (–) and positive (+) battery leads are tightened securely.

EWJ00790

! WARNING

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. Electrolyte contains sulfuric acid. Avoid contact with skin, eyes, or clothing.

Antidotes

External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call a physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flames, cigarettes, etc., well away. If using or charging the battery in an enclosed space, make sure that it is well ven-

Maintenance and care

tilated. Always shield your eyes when working near batteries.
KEEP OUT OF THE REACH OF CHILDREN.

ECJ00230

CAUTION:

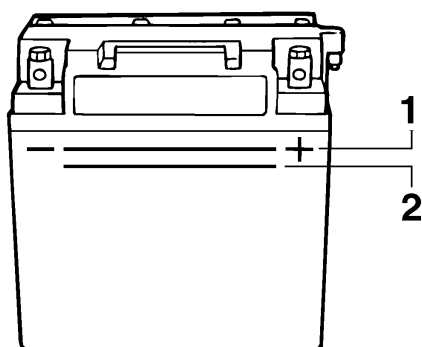
- Be careful not to place the battery on its side.
- Be sure to remove the battery from the battery compartment when adding electrolyte or charging the battery.

To remove the battery:

Disconnect the negative (–) battery lead first, then the positive (+) battery lead and breather hose, and then remove the battery from the watercraft.

To replenish the battery:

- (1) Make sure that the electrolyte level is between the maximum and minimum level marks.



- 1 Maximum level mark
- 2 Minimum level mark

- (2) If the electrolyte level is low, add distilled water to raise it to the specified level.

ECJ00240

CAUTION:

Normal tap water contains minerals that are harmful to a battery. Use only distilled water for replenishing the battery.

To recharge the battery:

ECJ00250

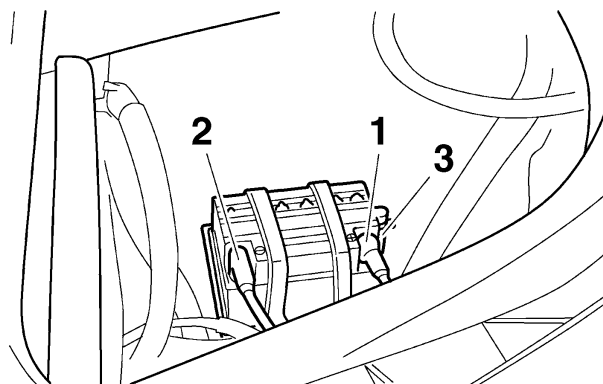
CAUTION:

Do not attempt to charge a battery hastily. Battery life could be shortened.

It is recommended to have a Yamaha dealer charge the battery. If you charge the battery yourself, be sure to read and follow the instructions provided with the battery tester and charger you use.

To install the battery:

- (1) Place the battery in the battery compartment and connect the battery leads to the battery terminals.
- (2) Connect the breather hose to the battery.
- (3) Secure the battery in place.



- 1 Positive (+) battery terminal: Red lead
- 2 Negative (–) battery terminal: Black lead
- 3 Breather hose

EWJ00400

! WARNING

Be sure to connect the breather hose to the battery. Fire or explosion could result if the breather hose is damaged, obstructed, or not connected properly.

ECJ00260

CAUTION:

After installation, make sure that the battery leads are properly connected to the battery terminals.

EJU34490

Fuel injection system

The fuel injection system was set at the Yamaha factory. If the fuel injection system needs to be adjusted, have a Yamaha dealer service the watercraft.

ECJ00220

CAUTION:

Do not attempt to adjust the fuel injection system. If the settings are disturbed by someone who does not have the necessary technical knowledge, poor engine performance and damage may result.

EJU34500

Checking the trolling speed

- (1) Place the watercraft in the water.
- (2) Start the engine and warm it up. Use the tachometer in the multifunction information center to check the trolling speed.

Trolling speed: 1650 $\pm$ 50 r/min
--

If the trolling speed is out of specification, have a Yamaha dealer service the watercraft.

Specifications

EJU34542

Specifications

Watercraft capacity:

Maximum people on board:

3 person

Maximum load capacity:

240 kg (530 lb)

Dimensions:

Length:

3340 mm (131.5 in)

Width:

1230 mm (48.4 in)

Height:

FX High Output 1160 mm (45.7 in)

FX Cruiser High Output 1240 mm (48.8 in)

Dry weight:

FX High Output 350 kg (772 lb)

FX Cruiser High Output 355 kg (783 lb)

Performance:

Maximum fuel consumption:

45.0 L/h (11.9 US gal/h) (9.9 Imp.gal/h)

Cruising range at full throttle:

1.56 hour

Trolling speed:

1650 $\pm$ 50 r/min

Engine:

Engine type:

Liquid cooled 4-stroke, DOHC

Number of cylinders:

4

Engine displacement:

1052 cm³

Bore & stroke:

76.0 $\times$ 58.0 mm (2.99 $\times$ 2.28 in)

Compression ratio:

11.9 : 1

Valve clearance-intake (cold):

0.11–0.20 mm (0.0043–0.0079 in)

Valve clearance-exhaust (cold):

0.25–0.34 mm (0.0098–0.0134 in)

Lubrication system:

Dry sump

Cooling system:

Water

Starting system:

Electric

Ignition system:

T.C.I.

Spark plug:

CR9EB

Spark plug gap:

0.7–0.8 mm (0.028–0.031 in)

Battery capacity:

12 V, 19.0 Ah

Charging system:

Flywheel magneto

Drive unit:

Propulsion system:

Jet pump

Jet pump type:

Axial flow, single stage

Impeller rotation:

Counterclockwise

Jet thrust nozzle angle:

24.0+24.0 °

Jet thrust nozzle trim angle:

-10, -5, 0, 5, 10 °

Fuel and oil:

Recommended fuel:

Regular unleaded gasoline

Minimum octane rating (PON):

86

Minimum octane rating (RON):

90

Recommended engine oil type SAE:

SAE 10W-30

Recommended engine oil grade API:

API SE,SF,SG,SH,SJ,SL

Fuel tank total capacity:

70 L (18.5 US gal) (15.4 Imp.gal)

Engine oil quantity with oil filter replacement:

2.3 L (2.43 US qt) (2.02 Imp.qt)

Engine oil quantity without oil filter replacement:

2.1 L (2.22 US qt) (1.85 Imp.qt)

Engine oil total quantity:

4.5 L (4.76 US qt) (3.96 Imp.qt)

EJU34560

Troubleshooting

If you have any trouble with your watercraft, use this section to check for the possible cause. If you cannot find the cause, or if the procedure for replacement or repair is not described in this owner's/operator's manual, have a Yamaha dealer perform the necessary service.

EJU34602

Troubleshooting chart

TROUBLE	POSSIBLE CAUSE		REMEDY	PAGE
Engine does not start (Starter motor does not turn over)	Yamaha Security System	Lock mode selected	Select unlock mode	38
	Engine shut-off switch	Clip not in place	Install clip	31
	Fuse	Burned out	Replace the fuse and check wiring	100
	Battery	Run down	Recharge	92
		Poor terminal connections	Tighten as required	92
		Terminal corroded	Clean	81
	Starter motor	Faulty	Have serviced by Yamaha dealer	—
Engine does not start (Starter motor turns over)	Throttle lever	Squeezed	Release	32
	Fuel	Empty	Refill as soon as possible	54
		Stale or contaminated	Have serviced by Yamaha dealer	86
	Fuel tank	Water or dirt present	Have serviced by Yamaha dealer	86
	Spark plug	Fouled or defective	Clean or replace	90
	Spark plug cap	Not connected or loose	Connect properly	90
		Connected to wrong cylinder	Connect properly	90
	Fuel injection system	Fuel pump faulty	Have serviced by Yamaha dealer	—

Trouble recovery

TROUBLE	POSSIBLE CAUSE		REMEDY	PAGE
Engine runs irregularly or stalls	Fuel	Empty	Refill as soon as possible	54
		Stale or contaminated	Have serviced by Yamaha dealer	86
	Fuel tank	Water or dirt present	Have serviced by Yamaha dealer	86
	Spark plug	Fouled or defective	Replace	90
		Incorrect heat range	Replace	90
		Gap incorrect	Adjust	90
	Spark plug cap	Loose	Connect properly	90
		Cracked, torn, or damaged	Have serviced by Yamaha dealer	—
	Electrical wiring	Loose connection	Have serviced by Yamaha dealer	—
	Fuel injection system	Faulty or clogged injectors	Have serviced by Yamaha dealer	—
Warning light or indicator blinks	Fuel level	Empty	Refill as soon as possible	54
	Engine overheated	Jet intake clogged	Clean	98
	Check engine warning	Faulty sensors	Have serviced by Yamaha dealer	45
Watercraft slow or loses power	Yamaha Security System	Low-RPM mode selected	Select normal mode	39
	Cavitation	Jet intake clogged	Clean	98
		Impeller damaged or worn	Have serviced by Yamaha dealer	98
	Engine over-heat warning	Engine speed reduction control activated	Clean jet intake and cool engine	44
	Oil pressure warning	Engine speed reduction control activated	Add oil	44
	Spark plug	Fouled or defective	Replace	90
		Incorrect heat range	Replace	90
		Gap incorrect	Adjust	90
	Spark plug caps	Loose	Connect properly	90
	Electrical wiring	Loose connection	Have serviced by Yamaha dealer	—
	Fuel	Stale or contaminated	Have serviced by Yamaha dealer	86
	Air filter	Clogged	Clean or replace	87
		Oil buildup	Replace	87

EJU34620

Emergency procedures

EJU34630

Cleaning the jet intake and impeller

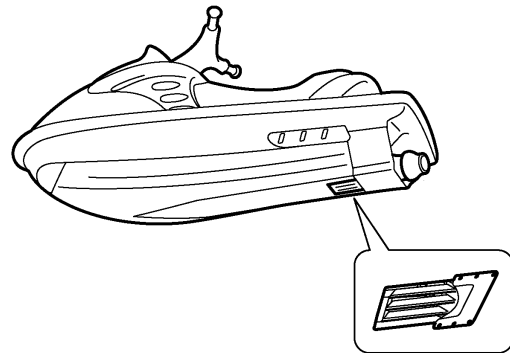
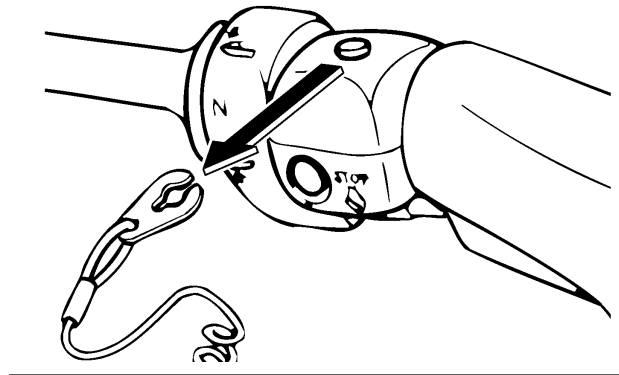
If weeds or debris get caught in the jet intake or impeller, cavitation can occur, causing jet thrust to decrease even though engine speed rises. If this condition is allowed to continue, the engine will overheat and may seize. If there is any sign that the jet intake or impeller is clogged with weeds or debris, return to shore and check the intake and impeller. Always stop the engine before beaching the watercraft.

EWJ00780

WARNING

Before attempting to remove weeds or debris from the jet intake or impeller area, shut the engine off and remove the clip from the engine shut-off switch. Severe injury or death could result from coming in

contact with the rotating parts of the jet pump.

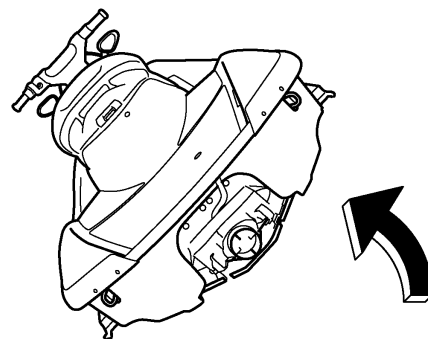


ECJ00650

CAUTION:

If weeds or debris get caught in the jet intake, do not operate the watercraft above trolling speed until they have been removed.

- (1) Turn the watercraft on its side as shown.



Trouble recovery

ECJ00660

CAUTION:

- Place a suitable clean cloth or carpeting underneath the watercraft to protect it from abrasions and scratches.
- Always turn the watercraft over onto its port (left) side.
- When turning the watercraft on its side, support the bow so that the handlebars are not bent or damaged.

(2) Remove any weeds or debris from around the drive shaft, impeller, jet pump housing, and jet thrust nozzle.

If debris is difficult to remove, consult a Yamaha dealer.

ECJ00670

CAUTION:

Always avoid operating your watercraft in areas where weed growth is thick. If traveling in weeded areas is unavoidable, operate the engine alternately at partial throttle and full throttle. Weeds tend to accumulate more at a steady speed and at trolling speed. If weeds clog the jet intake or impeller area and cause cavitation, follow the cleaning procedure above.

EJU34640

Jumping the battery

If the watercraft battery has run down, the engine can be started using a 12-volt booster battery and jumper cables.

EWJ00790

WARNING

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. Electrolyte contains sulfuric acid. Avoid contact with skin, eyes, or clothing.

Antidotes

External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten

egg, or vegetable oil. Call a physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

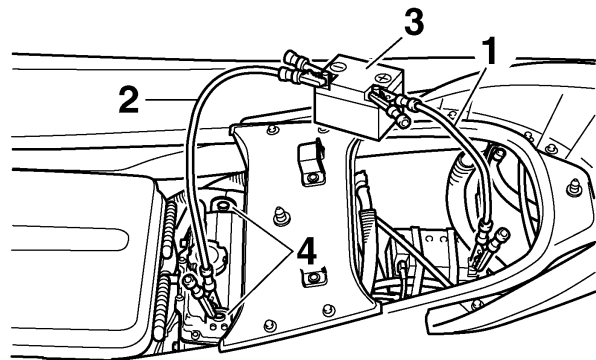
Batteries produce explosive gases. Keep sparks, flames, cigarettes, etc., well away. If using or charging the battery in an enclosed space, make sure that it is well ventilated. Always shield your eyes when working near batteries.

KEEP OUT OF THE REACH OF CHILDREN.

EJU34661

Connecting the jumper cables

- (1) Connect the positive (+) jumper cable to the positive (+) battery terminals of both batteries.
- (2) Connect one end of the negative (–) jumper cable to the negative (–) battery terminal of the booster battery.
- (3) Connect the other end of the negative (–) jumper cable to an engine hanger.



- 1 Positive (+) jumper cable
- 2 Negative (–) jumper cable
- 3 Booster battery
- 4 Engine hanger

ECJ00680

CAUTION:

Do not connect the end of the negative (–) jumper cable to the negative (–) battery terminal of the watercraft battery! Make sure that all connections are secure and correct before attempting to start the en-

Trouble recovery

gine. Any wrong connection could damage the electrical system.

- (4) Start the engine, and then disconnect the jumper cables by reversing the steps above.

ECJ00480

CAUTION:

- Never push the start switch while the engine is running.
- Do not operate the start switch for more than 5 seconds, otherwise the battery will be discharged and the engine will not start. Also, the starter motor could be damaged. If the engine does not start in 5 seconds, release the start switch, wait 15 seconds, and then try again.

EJU34680

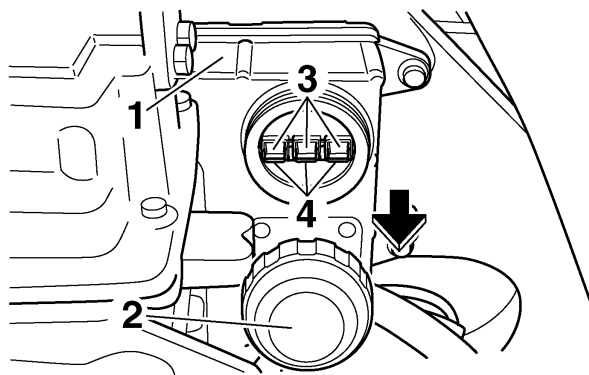
Replacing the fuses

The fuses are located in the electrical box.

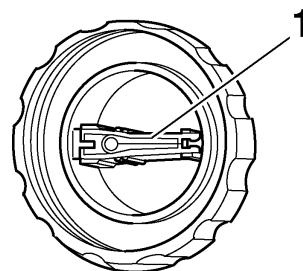
To replace a fuse:

- (1) Remove the cap on the electrical box.

- (2) Replace the blown fuse with the spare fuse of the correct amperage by using the fuse puller on the reverse side of the cap.



- 1 Electrical box
- 2 Cap
- 3 Fuse
- 4 Spare fuse



- 1 Fuse puller

Fuse amperage:
Main fuse:
20 A
Meter fuse:
3 A
Bilge pump fuse:
3 A

EWJ00800

WARNING

Do not use fuses of higher amperage than recommended. Substitution with a fuse that has an improper rating can cause ex-

Trouble recovery

tensive electrical system damage and possible fire.

EJU34710

Towing the watercraft

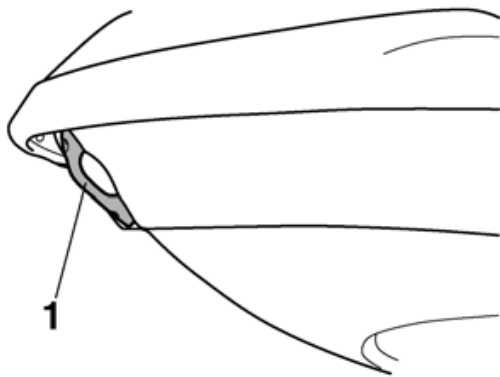
If the watercraft becomes inoperative in the water, it can be towed to shore.

If the watercraft must be towed in an emergency using a towline, the operator should ride the watercraft, holding onto the handlebars.

ECJ00720

CAUTION:

- Tow the watercraft at 5 mph (8 km/h) or less, otherwise water could enter the engine through the exhaust passages or through the air intake and flood the engine compartment if it is towed too fast.
- Tow the watercraft using the bow eye only.
- The bow must be kept up out of the water during towing to prevent water from entering the engine compartment.



1 Bow eye

EWJ00810

WARNING

- The watercraft should only be towed in an emergency.
- The towline should be long enough so that the watercraft will not collide with the towing boat when slowing down. A good rule of thumb is a towline that is

three times the combined length of the towing boat and the watercraft.

- The operator of the towing boat must keep speed to a minimum and avoid traffic or obstacles which could be a hazard to the rider on the watercraft.

EJU35270

Submerged watercraft

If the watercraft is submerged or flooded with water, follow the procedure below and consult a Yamaha dealer as soon as possible. Failure to do so could result in serious engine damage!

In an emergency:

- (1) Beach the watercraft and remove the stern drain plugs to drain the water from the engine compartment. (See page 58 for more information.) Remove the storage compartment drain plugs to drain the water from the storage compartments.
- (2) Install the stern drain plugs and storage compartment drain plugs.
- (3) Disconnect the spark plug caps, and then remove the spark plugs.

ECJ00760

CAUTION:

Do not connect the spark plugs to the spark plug caps.

- (4) Disconnect the fuel injector couplers.

ECJ00770

CAUTION:

Cover the disconnected fuel injector couplers so that they do not get wet. If the couplers get wet, they could corrode, which could lead to poor connections.

- (5) Crank the engine for 5 seconds at wide open throttle. Repeat this step until all of the water in the cylinders has been expelled.

- (6) Spray a rust inhibitor such as Yamaha Stor-Rite Engine Fogging Oil into each spark plug hole for 5 seconds.
- (7) Crank the engine for 5 seconds at wide open throttle. Repeat this step several times.
- (8) Install the spark plugs, and then connect the spark plug caps and fuel injector couplers.

ECJ00780

CAUTION:

Do not start the engine even after completing the previous steps. Any water remaining in the engine could cause serious engine damage.

- (9) Have the watercraft inspected by a Yamaha dealer as soon as possible.

ECJ00790

CAUTION:

Be sure to have a Yamaha dealer inspect the watercraft. Otherwise, serious engine damage could result.

Consumer information

EJU34780

Limited warranty

YAMAHA MOTOR CORPORATION, U.S.A. WATERCRAFT LIMITED WARRANTY

Yamaha Motor Corporation is proud of its heritage and reputation for producing products with high standards of quality and workmanship. Product excellence provides the cornerstone for our commitment to customer satisfaction. The Yamaha Watercraft Limited Warranty is your assurance of this commitment.

This warranty provides you with protection against the expense of repairs for your watercraft that are required as a result of defects in materials or workmanship. When maintained and utilized in the prescribed manner, you can count on your Yamaha watercraft to provide reliable service.

This warranty provides you with specific coverage and notes your responsibilities in maintaining and operating your watercraft. Please take the time to read and become familiar with this warranty.

PERIOD OF WARRANTY. Any new Yamaha watercraft purchased for pleasure use from an authorized Yamaha dealer in the United States, will be warranted against defects in material or workmanship for a period of one (1) year from date of purchase, subject to exclusions noted herein. Any Yamaha Watercraft purchased and utilized for commercial applications will be warranted for a period of ninety [90] days from the date of purchase, subject to exclusions noted herein. Replacement parts used in warranty repairs will be warranted for the balance of the applicable warranty period.

The warranty described here applies to watercrafts purchased and registered for use in the United States only. For warranty provisions outside the United States, contact the particular country's local Yamaha distributor.

OBTAINING REPAIRS UNDER WARRANTY. During the period of warranty, any authorized Yamaha dealer will, free of charge, repair or replace, at Yamaha's option, any parts adjudged defective by Yamaha due to faulty workmanship or material from the factory. All parts replaced under warranty will become the property of Yamaha Motor Corporation, U.S.A.

CUSTOMER'S RESPONSIBILITY. Under the terms of this warranty, the customer will be responsible for ensuring that the watercraft is properly operated, maintained, and stored as specified in the applicable Owner's/Operator's Manual.

The owner of the watercraft shall give notice to an authorized Yamaha dealer of any and all apparent defects within ten [10] days of discovery and make the watercraft available at that time for inspection and repairs at the dealer's place of business.

GENERAL EXCLUSIONS FROM WARRANTY. This warranty will not cover the repair of damage if the damage is a result of abuse or neglect of the product. Examples of abuse and neglect include, but are not limited to:

1. Racing or competition use, modification of original parts abnormal strain.
2. Lack of proper maintenance and off season storage as described in the Owner's/Operator's Manual, installation of parts or accessories that are not equivalent in design and quality to genuine Yamaha parts.
3. Use of lubricants, oils, and fuel/oil mixtures that are not suitable for watercraft motor use.
4. Damage as a result of accidents, collisions, contact with foreign materials, or submersion.
5. Growth of marine organisms on motor or hull surfaces.
6. Normal deterioration.
7. Gel coat stress cracks.

SPECIFIC PARTS EXCLUDED FROM WARRANTY.

Parts replaced due to normal wear or routine maintenance such as oil, spark plugs, fuel filters, impeller and liner, and anodes are not covered by warranty. Charges for transporting the watercraft to and from an authorized Yamaha dealer are excluded from warranty coverage.

TRANSFER OF WARRANTY. Transfer of the warranty from the original purchaser to any subsequent purchaser is possible by having the watercraft inspected by an authorized Yamaha dealer and requesting the dealer to submit a change of registration to Yamaha Motor Corporation, U.S.A. within ten [10] days of the transfer.

YAMAHA MOTOR CORPORATION, U.S.A. MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE OBLIGATIONS AND TIME LIMITS STATED IN THIS WARRANTY ARE HEREBY DISCLAIMED BY YAMAHA MOTOR CORPORATION, U.S.A. AND EXCLUDED FROM THIS WARRANTY.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. ALSO EXCLUDED FROM THIS WARRANTY ARE ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING LOSS OF USE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

Consumer information

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

**YAMAHA MOTOR CORPORATION, U.S.A.
Post Office Box 6555
Cypress, California 90630**

WARRANTY QUESTIONS AND ANSWERS

- Q. What costs are my responsibility during the warranty period?
- A. The customer's responsibility includes all costs of normal maintenance services, non-warranty repairs, accident and collision damages.
- Q. What are some examples of "abnormal" strain, neglect, or abuse?
- A. These terms are general and overlap each other in areas. Specific examples include:
Running the watercraft out of oil, operating the machine with a broken or damaged part which causes another part to fail, and so on. If you have any specific questions on operation or maintenance, please contact your Yamaha dealer for advice.
- Q. Does the warranty cover incidental costs such as transportation due to a failure?
- A. No. The warranty is limited to repair of the watercraft itself.
- Q. May I perform any or all of the recommended maintenance shown in the Owner's/Operator's Manual instead of having the dealer do them?
- A. Yes, if you are a qualified mechanic and follow the procedures specified in the Owner's/Operator's and Service Manual. We do recommend, however, that items requiring special or equipment be done by a Yamaha dealer.
- Q. Will the warranty be void or cancelled if I do not operate or maintain my new watercraft exactly as specified in the Owner's/Operator's Manual?
- A. No. The warranty on a new watercraft cannot be "voided" or "cancelled". **However, if a particular failure is caused by operation or maintenance other than as shown in the Owner's/Operator's Manual, that failure may not be covered under warranty.**
- Q. What responsibility does my dealer have under this warranty?
- A. Each Yamaha dealer is expected to:
1. Completely set up each new watercraft before sale.
 2. Explain the operation, maintenance, and warranty requirements to your satisfaction at the time of sale, and upon your request at any later date. In addition, each Yamaha dealer is held responsible for his setup, service and warranty repair work.
- Q. Is the warranty transferable to second owners?
- A. Yes. The remainder of the existing warranty can be transferred upon request. The unit has to be inspected and re-registered by an authorized Yamaha dealer for the policy to remain effective.

CUSTOMER SERVICE

If your watercraft requires warranty service, you must take it to any authorized Yamaha dealer within the continental United States. Be sure to bring your warranty registration card or other valid proof of the original date of purchase. If a question or problem arises regarding warranty, first contact the owner of the dealership. Since all warranty matters are handled at the dealer level, this person is in the best position to help you. If you are still not satisfied and require additional assistance, please write:

**YAMAHA MOTOR CORPORATION U.S.A.
CUSTOMER RELATIONS DEPARTMENT
P.O. Box 6555
Cypress, California 90630**

CHANGE OF ADDRESS

The federal government requires each manufacturer to maintain a complete, up-to-date list of all first purchasers against the possibility of a safety-related defect and recall. This list is compiled from the purchase registrations sent to Yamaha Motor Corporation, U.S.A. by the selling dealer at the time of your purchase.

If you should move after you have purchased your new watercraft, please advise us of your new address by sending a postcard listing your Yamaha model name, engine number, dealer number [or dealer's name] as it is shown on your warranty card, your name and new mailing address.

Mail to:

**YAMAHA MOTOR CORPORATION, U.S.A.
P.O. Box 6555
Cypress, California 90630
Attention: Warranty Department**

This will ensure that Yamaha Motor Corporation, U.S.A. has an up-to-date registration record in accordance with federal law.

Consumer information

EJU34800

YAMAHA EXTENDED SERVICE (Y.E.S.)

Keep your Yamaha protected even after your warranty expires with genuine Yamaha Extended Service (Y.E.S.).

- Y.E.S. is designed and administered by Yamaha Motor Corporation to provide maximum owner satisfaction. You get uninterrupted factory-backed coverage for extra peace of mind.
- Y.E.S. is flexible. You choose the plan that is right for you: 12 months, 24 months, 36 months, or (on four-stroke models) 48 months beyond your warranty period.
- Y.E.S. is designed and administered by the same Yamaha people who handle your warranty—and it shows in the comprehensive coverage benefits. There are no mileage limitations. Coverage is not limited to “moving parts” or the “drive train” like many other plans. And Y.E.S. covers manufacturing defects just like the warranty. See the sample contract at your Yamaha dealer to see how comforting uninterrupted factory-backed protection can be.
- You do not have to pay anything for covered repairs. There is no deductible to pay, and repairs are not “pro-rated.” You do not have any “out-of-pocket” expenses for covered repairs.
- In addition, Travel and Recreation Interruption Protection (TRIP) is included at no extra cost. TRIP gives you up to \$150 reimbursement per occurrence for any reasonable expenses you incur because your Yamaha needs covered service: replacement vehicle rental, emergency towing, phone calls, even food and lodging when you are away from home. This superb coverage goes into effect when you purchase Y.E.S., so it applies to any warranty repairs as well as covered repairs during your entire Y.E.S. plan period.
- Y.E.S. coverage is honored at any authorized Yamaha dealer nationwide.
- Y.E.S. coverage is transferable to a new owner if you sell or trade-in. That can make your Yamaha much more valuable!

This excellent Y.E.S. plan coverage is only available to Yamaha owners like you, and only while your Yamaha is still within the Yamaha Limited Warranty period. So visit your authorized Yamaha dealer to get all the facts. He can show you how easy it is to protect your investment with Yamaha Extended Service.

We urge you to act now. You will get the excellent benefits of TRIP coverage right away, and you will rest easy knowing you will have strong factory-backed protection even after your Yamaha Limited Warranty expires.

A special note:

If visiting your dealer is not convenient, contact Yamaha with your Primary ID number (your Owner's Manual shows you where to find this number). We will be happy to help you get the Y.E.S. coverage you need.

Yamaha Service Marketing
P.O. Box 6555
Cypress, CA 90630
1-(866)-YES-EXTD
(1-866-937-3983)



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