



**2007 WaveRunner
FX High Output
FX Cruiser High Output**

OWNER'S/OPERATOR'S MANUAL

YAMAHA MOTOR CO., LTD.
F1X-F8199-71-E0

READ THIS OWNER'S/OPERATOR'S MANUAL CAREFULLY BEFORE OPERATING YOUR WATERCRAFT.

Important manual information

EJU30131

Declaration of Conformity for Personal Watercraft (PWC) with the requirements of Directive 94/25/EC as amended by Directive 2003/44/EC

Revision No:

Name of PWC manufacturer:

YAMAHA MOTOR MANUFACTURING CORPORATION OF AMERICA

Address: 1000 GA Highway 34 East

Town: Newnan Georgia **Post Code:** 30265-1320

Country: USA

Name of Authorized Representative (if applicable):

YAMAHA MOTOR EUROPE N.V.

Address: Koolhovenlaan 101

Town: Schiphol-Rijk **Post Code:** 1119 NC

Country: The Netherlands

Name of Notified Body for noise emission assessment: Luxcontrol SA

Address: 1, avenue des Terres Rouges BP 349

Town: Esch-sur-Alzette **Post Code:** L-4004

Country: Luxembourg **ID Number:** 0882

Name of Notified Body for exhaust emission assessment: Luxcontrol SA

Address: 1, avenue des Terres Rouges BP 349

Town: Esch-sur-Alzette **Post Code:** L-4004

Country: Luxembourg **ID Number:** 0882

ECtype-examination Certificate number (if applicable): LC*2003/44*10020

Important manual information

Conformity assessment modules used:

for construction: A Aa B+C B+D B+E B+F G H

for noise emissions: Aa G H

for exhaust emissions: B+C B+D B+E B+F G H

Other Community Directives applied:

Directive 89/336/EEC relating to electromagnetic compatibility (EMC), using the following standards, for emission CISPR12, for generic immunity EN61000-6-2

DESCRIPTION OF CRAFT

Craft model Identification Number, starting from

U S - Y A M A 1 6 4 0 K 6 0 7 -

Model name / Commercial name :

Design Category: C D

FX1100A-F / FX Cruiser High Output, FX1100-F / FX High Output

IDENTIFICATION OF ENGINE(S) COVERED BY THIS DECLARATION OF CONFORMITY

Combustion cycle: 2 stroke 4 stroke

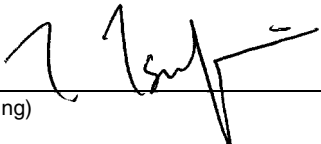
Unique engine identification number(s) or engine family code(s)	EC Type-examination certificate (for exhaust)
6AA	LC*2003/44*10020

ESSENTIAL REQUIREMENTS	standards	other normative document/method	technical file	Please specify in more detail (* = mandatory standard)
I.A design and construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EN ISO 13590
I.B exhaust emissions	<input checked="" type="checkbox"/> *	<input type="checkbox"/>	<input checked="" type="checkbox"/>	*EN ISO 8178-1:1996
I.C noise emissions	<input checked="" type="checkbox"/> *	<input type="checkbox"/>	<input checked="" type="checkbox"/>	*EN ISO 14509

This declaration of conformity is issued under the sole responsibility of the PWC manufacturer. I declare on behalf of the PWC manufacturer that the craft model and engine(s) mentioned above comply with all applicable essential requirements in the way specified and are in conformity with the type for which above mentioned EC type-examination certificate(s) has(have) been issued.

Name / title: T. Tsuchiya / President of YAMAHA MOTOR EUROPE N.V.

(identification of the person empowered to sign on behalf of the PWC manufacturer or his authorized representative)

Signature:  (or an equivalent marking)

Date and place of issue: 1st / November / 2006, Schiphol-Rijk, The Netherlands

Important manual information

EJU30190

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. If you have any questions about the operation or maintenance of your watercraft, please consult a Yamaha dealer.

This manual is not a course on boating safety or seamanship. If this is your first watercraft, or if you are changing to a type of watercraft you are not familiar with, for your own comfort and safety, please ensure that you obtain proper training or practice before operating the watercraft by yourself. In addition, a Yamaha dealer or boating organization will be pleased to recommend local sea schools, or competent instructors.

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.

EJU30230

**WaveRunner FX High Output/
FX Cruiser High Output
OWNER'S/OPERATOR'S MANUAL
©2006 by Yamaha Motor Co., Ltd.
1st Edition, September 2006**

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Table of contents

General and important labels	1	Handgrip	32
Identification numbers	1	Reboarding step	32
Primary Identification (PRI-ID)		Bow eye	32
number	1	Stern eyes	33
Hull Identification Number (HIN)	1	Pull-up cleats	
Engine serial number	1	(for FX Cruiser High Output)	33
Model information	2	Yamaha Engine Management	
Builder's plate	2	System (YEMS)	33
Important labels	3	Yamaha Security System	33
Warning labels	4	Multifunction information center	34
Other labels	8	Storage compartments	45
Safety information	10	Operation	49
Limitations on who may operate		Fuel and oil	49
the watercraft	10	Gasoline	49
Cruising limitations	11	Engine oil	50
Operation requirements	12	Filling the fuel tank	50
Recommended equipment	14	Pre-operation checks	51
Hazard information	15	Pre-operation check list	51
Watercraft characteristics	15	Pre-operation check points	53
Water-skiing	17	Operation	61
Safe boating rules	19	Engine break-in	61
Enjoy your watercraft		Launching the watercraft	61
responsibly	19	Starting the engine	61
		Stopping the engine	63
		Leaving the watercraft	63
		Operating your watercraft	64
		Getting to know your watercraft	64
		Learning to operate your	
		watercraft	64
		Riding with passengers	65
		Starting the watercraft	65
		Boarding and starting in	
		deep water	66
		Capsized watercraft	69
		Turning the watercraft	70
		Stopping the watercraft	72
		Beaching the watercraft	72
		Docking the watercraft	72
		Reverse on waterways	72
		Rough water operation	73
Features and functions	20		
Location of main components	20		
Operation of controls and			
other functions	24		
Seats	24		
Hood	25		
Fuel tank filler cap	26		
Remote control transmitter	26		
Engine stop switch	27		
Engine shut-off switch	27		
Start switch	27		
Throttle lever	28		
Cooling water pilot outlets	28		
Steering system	28		
Tilt lever	29		
Shift lever	29		
Quick Shift Trim System (QSTS)			
selector	30		

Table of contents

Post-operation care	73
Transporting	75
Maintenance and care.....	76
Storage	76
Flushing the cooling system	76
Lubrication	77
Fuel system	77
Battery	78
Cleaning the watercraft	78
Maintenance and adjustments	79
Owner's/operator's manual and tool kit	80
Periodic maintenance chart	81
Checking the fuel system	83
Engine oil and oil filter	83
Checking the air filter element	84
Checking the jet thrust nozzle angle	85
Checking the shift cable	85
Checking and adjusting the throttle cable	85
Cleaning and adjusting the spark plugs	86
Lubrication points	87
Checking the battery	88
Fuel injection system	90
Specifications	91
Specifications	91
Trouble recovery	92
Troubleshooting	92
Troubleshooting chart	92
Emergency procedures	94
Cleaning the jet intake and impeller	94
Jumping the battery	95
Replacing the fuses	96
Towing the watercraft	97
Submerged watercraft	97

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

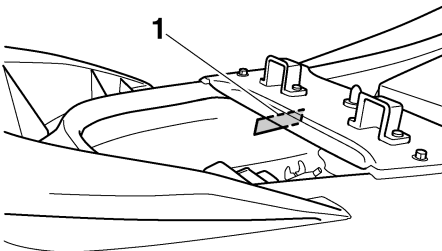
Primary Identification (PRI-ID) number

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

MODEL:

FX1100-F (FX High Output)

FX1100A-F (FX Cruiser High Output)



1 Primary Identification (PRI-ID) number location

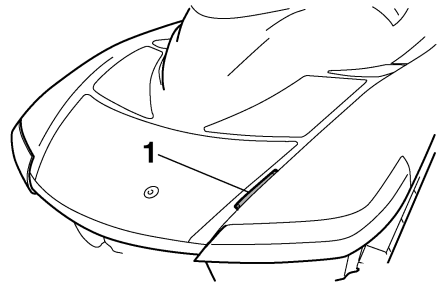
MODEL	<input type="text"/>	PRI-ID	<input type="text"/>
		F1X	<input type="text"/>
<small>YAMAHA MOTOR MANUFACTURING CORPORATION OF AMERICA. ASSEMBLED IN U.S.A. FROM AMERICAN AND JAPANESE COMPONENTS. ASSEMBLÉ AUX ÉTATS-UNIS DE PIÈCES AMÉRICAINES ET JAPONAISES.</small>			

F1X -

EJU30300

Hull Identification Number (HIN)

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



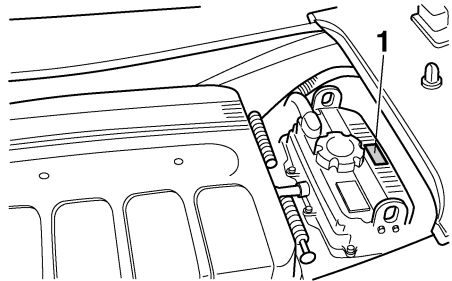
1 Hull Identification Number (HIN) location

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

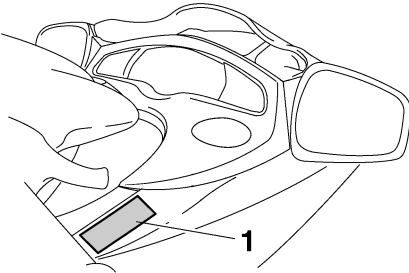
EJU30320

Model information

EJU30330

Builder's plate

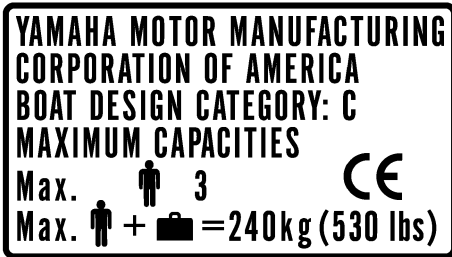
Part of the information is given on the builder's plate affixed on the craft. A full explanation of this information is given in the relevant sections of this manual.



1 Builder's plate location

NOTE: _____

The significant wave height is the mean height of the highest one-third of the waves, which approximately corresponds to the wave height estimated by an experienced observer. However, some waves will be double this height.



Design category of this personal watercraft: C

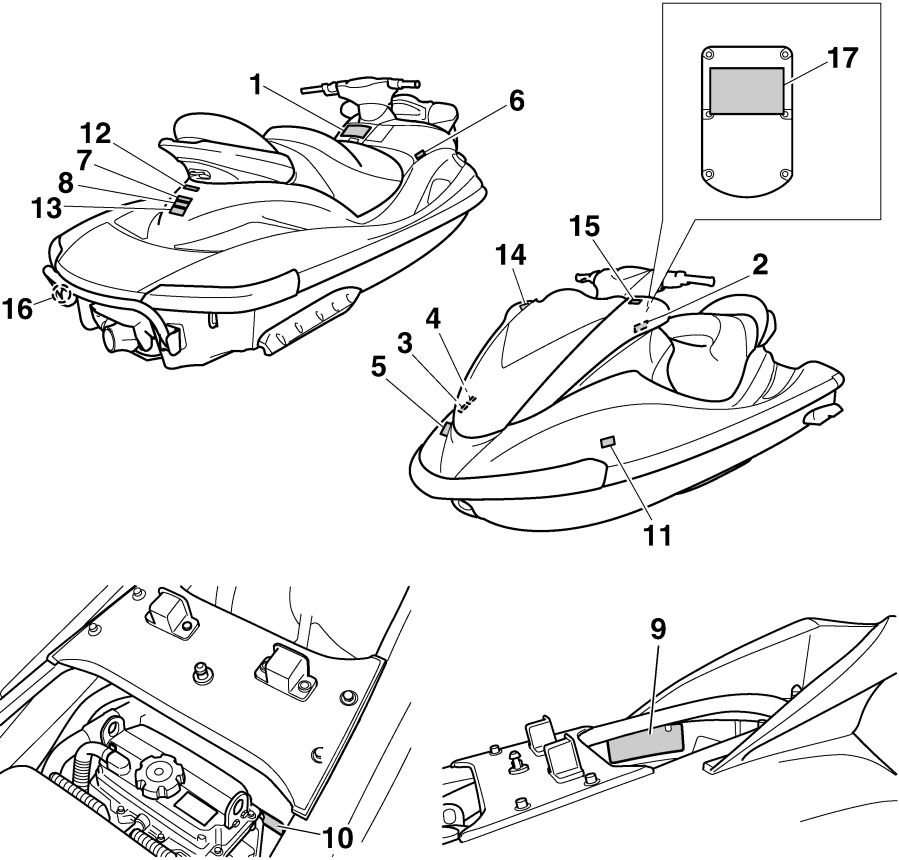
Category C:

This watercraft is designed to operate in winds up to Beaufort force 6 and the associated wave heights (significant wave heights up to 2 m (6.56 ft); see the following NOTE). Such conditions may be encountered in exposed inland waters, in estuaries, and in coastal waters in moderate weather conditions.

General and important labels

EJU30450

Important labels



General and important labels

EJU35910

Warning labels

1

▲ WARNING **▲ WARNING**

To reduce the risk of **SEVERE INJURY** or **DEATH**:

WEAR A PERSONAL FLOTATION DEVICE (PFD).
All riders must wear an authority-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).


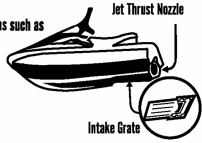

TO AVOID COLLISIONS:
SCAN CONSTANTLY for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.
OPERATE DEFENSIVELY at safe speeds and keep a safe distance away from people, objects, and other watercrafts.

- 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



FIX-U41B1-10

General and important labels

2

⚠ AVERTISSEMENT

Afin de limiter les risques de BLESSURES GRAVES, voire MORTELLES: **PORTER UN GILET DE SAUVETAGE.** Tout utilisateur doit porter un gilet de sauvetage homologué pour les scooters des mers. **PORTER DES VÊTEMENTS PROTÉCTEURS.** Le choc infligé par la pénétration forcée d'eau dans les orifices corporels lors d'une chute ou lors du contact avec le jet d'eau de la pompe risque de provoquer des lésions graves. Le port d'un simple maillot de bain ne constitue pas une protection adéquate contre la pénétration de l'eau dans le rectum et/ou le vagin. Tout utilisateur doit porter le pantalon d'une tenue de plongée ou tout autre vêtement offrant une protection semblable. (Voir le manuel d'utilisation.) Le port de chaussures, de gants et de lunettes de plongée est recommandé. **CONNAÎTRE LES LOIS DE NAVIGATION.** La Yamaha Motor Co., Ltd. recommande la limite d'âge de pilotage de 16 ans. Vérifier l'âge du pilote ainsi que les exigences quant à l'âge brimées par la législation locale. Il est préférable, et parfois requis par certaines législations, de suivre un cours de sécurité maritime. **ATTACHER LA LANIÈRE DE L'INTERUPTEUR D'ARRÊT DU MOTEUR** au poignet et l'éloigner du guidon afin que le moteur se coupe bien en cas de chute. Après utilisation, retirer la lanière du scooter afin de prévenir toute utilisation par des enfants ou des personnes non-autorisées.



YAMAHA

F1B-U41B1-21

3

⚠ AVERTISSEMENT

Afin de limiter les risques de BLESSURES GRAVES, voire MORTELLES:

RESPECTER SES LIMITES ET ÉVITER LES MANOEUVRES BRUTALES afin de limiter tout risque de perte de contrôle, d'éjection et de collision. Il s'agit d'un véhicule à hautes performances et pas d'un jouet. Des virées brusques ou le saut de sillages ou de vagues accroît le risque de blessures au dos, voire de paralysie, de blessures au visage et de fractures diverses. **Ne jamais sauter**

des sillages ni des sauges.

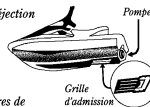
NE PAS DONNER DES GAZ LORSQUE QUELQU'UN SE TROUVE DERRIÈRE LE VÉHICULE: couper le moteur ou

laisser tourner au ralenti. Eau et/ou débris projetés par la pompe pourraient causer des blessures graves.

NE PAS S'APPROCHER DE LA GRILLE D'ADMISSION lorsque le moteur tourne. Cheveux longs, vêtements amples ou lanières de gilet de sauvetage risquent d'être happés, ce qui pourrait provoquer des blessures, ou même une noyade.

NE JAMAIS PILOTER APRÈS AVOIR ABSORBÉ DE L'ALCOOL, DES DROGUES OU CERTAINS MÉDICAMENTS.

**LIRE ET RESPECTER LES INSTRUCTIONS DONNÉES
DANS LE MANUEL D'UTILISATION.**



YAMAHA

F1B-U41B1-31

4

⚠ AVERTISSEMENT

Les collisions sont la cause principale des BLESSURES ET DÉCÈS d'utilisateurs de scooter des mers. **POUR ÉVITER LES COLLISIONS: ÊTRE CONSTAMMENT à l'affût de personnes, d'objets et d'autres bateaux.** Être conscient des conditions limitant sa visibilité ou celle des autres embarcations.

PILOTER AVEC PRUDENCE à des vitesses raisonnables

et garder une distance de sécurité entre le scooter et toute personne, objet et embarcation.

- Ne pas suivre une autre embarcation de trop près.
- Ne pas se rapprocher d'autrui en vue de l'éclabousser.
- Éviter les virages brusques ou toute manoeuvre qui risque de mettre un autre pilote en danger ou qui l'empêche de pouvoir déterminer clairement la direction que l'on prend.
- Éviter les endroits où flottent des objets et les eaux peu profondes.

RÉAGIR RAPIDEMENT en vue d'éviter les collisions. Garder à l'esprit que les bateaux n'ont pas de freins.

NE PAS LÂCHER LES GAZ LORSQUE L'ON ESSAYE DE S'ÉLOIGNER d'objets—une poussée est nécessaire à la direction du scooter des mers. Toujours s'assurer avant le départ que l'accélérateur et la direction fonctionnent

correctement. Suivre les lois de navigation ainsi que les législations nationales,

provinciales et locales concernant les scooters des mers.

Voir le manuel d'utilisation pour plus d'informations.

F1B-U41B2-01

5

General and important labels

5

⚠ WARNING	⚠ AVERTISSEMENT
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.	<i>L'essence est très inflammable et explosible. Un incendie ou une explosion risquent de provoquer des blessures graves, voire mortelles. Couper le moteur. Faire le plein dans un endroit bien aéré et éloigné de toute flamme ou étincelle. Ne pas fumer. Éviter de renverser de l'essence. Essuyer immédiatement toute coulure d'essence. Déposer les selles pour évacuer les vapeurs d'essence du compartiment du moteur avant de mettre le moteur en marche. Ne jamais mettre le moteur en marche en cas de fuite d'essence ou si un branchement électrique est desserré.</i>
REGULAR UNLEADED GASOLINE ONLY	ESSENCE NORMALE SANS PLOMB UNIQUEMENT

F1S-U415B-11

6

⚠ WARNING
REVERSE SHIFT LEVER OPERATION:
<ul style="list-style-type: none"> • Shift only while engine is idling or off. • Reverse is for low speed maneuvering only. • Do not use reverse function to slow down or stop PWC as it could cause you to lose control, be ejected, or impact handlebars. • Make sure that there are no obstacles or people behind you before shifting to reverse.
⚠ AVERTISSEMENT
FONCTIONNEMENT DU LEVIER D'INVERSION DE MARCHÉ:
<ul style="list-style-type: none"> • Inverser la marche uniquement lorsque le moteur tourne au ralenti ou lorsqu'il est coupé. • La marche arrière est destinée exclusivement aux manœuvres à vitesse réduite. • Ne pas sélectionner la marche arrière en vue de ralentir ou d'arrêter le scooter des mers, car il y a risque de perte de contrôle, d'éjection ou de heurt sur le guidon. • S'assurer qu'il n'y a ni obstacle ni personne derrière le scooter avant d'engager la marche arrière.

FOV-U41D5-31

7

⚠ WARNING
Do not use cleat or grips to lift PWC. PWC could fall, which could result in severe injury.
⚠ AVERTISSEMENT
Ne pas soulever le scooter à l'aide du taquet ou des poignées. Le scooter pourrait tomber et provoquer des blessures graves.

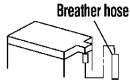

(F1S-U41E1-11)

8

⚠ WARNING
<ul style="list-style-type: none"> • Severe internal injuries can occur if water is forced into body cavities as a result of being near jet thrust nozzle. • Wear a wetsuit bottom or clothing that provides equivalent protection. • Do not board PWC if operator is applying throttle.
⚠ AVERTISSEMENT
<ul style="list-style-type: none"> • Le choc infligé par la pénétration forcée d'eau dans les orifices corporels lors du contact avec le jet de la pompe risque de provoquer des lésions graves. • Porter le pantalon d'une tenue de plongée ou tout autre vêtement offrant une protection semblable. • Ne pas embarquer lorsque la pilote donne des gaz.

(F1S-U41E1-11)

9

⚠ WARNING
Be sure to connect breather hose to battery. Fire or explosion could result if not connected properly.

⚠ AVERTISSEMENT
Bien veiller à brancher la durit de mise à l'air à la batterie. Un mauvais branchement risque d'être à l'origine d'un incendie ou d'une explosion.


YAMAHA

FOV-U41DB-12

General and important labels

10

▲ WARNING / AVERTISSEMENT / 警告
Do not touch or remove electrical parts when starting or running the engine.
Ne pas toucher ou retirer les pièces électriques lors du démarrage ou de la marche du moteur.
運転中は電装品には触らないでください。
<small>YAMAHA</small> <small>6B6-63623-00</small>

11

▲ AVERTISSEMENT
APPLICABLE POUR LA FRANCE SEULEMENT
<ul style="list-style-type: none">• <i>En France : permis de conduire et immatriculation obligatoire.</i>• <i>Navigation en mer autorisée entre 300 mètres et 2 milles nautique.</i>• <i>Entre 0 et 300 mètres, se référer aux instructions nautiques locales affichées. Sinon, règle générale : vitesse maxi 5 noeuds (9Km/h) dans cette zone.</i>• <i>Utiliser les chenaux obligatoires de sortie lorsqu'ils existent.</i>• <i>Respecter les règles de priorité.</i>• <i>Gilet de sauvetage obligatoire-Fusée et bout de remorquage à bord.</i>• <i>Ne jamais conduire sous l'influence de l'alcool ou de drogues.</i>• <i>Consulter la météo avant de sortir en mer.</i>• <i>Une conduite responsable et un contrôle quotidien de votre machine suivant le manuel d'entretien YAMAHA seront garants de votre sécurité.</i>
<small>YAMAHA</small> <small>GP8-U416H-01</small>

General and important labels

EJU36260

Other labels

12

**FIRE EXTINGUISHER CONTAINER
COMPARTIMENT DE L'EXTINCTEUR**

F1B-U41F5-21

13

**RATED PERSON CAPACITY: 3
MAXIMUM LOAD: 240 kg (530 lb)
CAPACITÉ MAXIMALE: 3 personnes
CHARGE MAXIMALE: 240 kg(530 lb)**

(F1S-U41E1-11)

14

VISOR

Keep gasoline, oil, solvents, and alkaline or acid cleaners away from visor. Damage may occur. For cleaning, use neutral detergent.

YAMAHA

F0X-U41FD-01

15

VISIÈRE

Éviter d'enduire la visière d'essence, d'huile, de dissolvant ou de produits de nettoyage alcalins ou acides.

Celle-ci risque d'être abîmée. Nettoyer avec un détergent neutre.

YAMAHA

F0X-U41FD-11

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

16

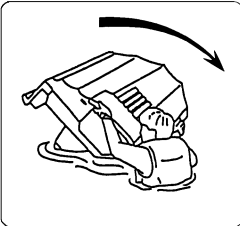
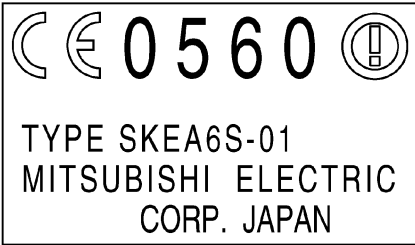


FIG-U41B-00

General and important labels

The following CE marking is located on the back of the remote control transmitter.
17



EJU30680

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. Before using this watercraft, make sure that its use is permitted under local laws, bylaws, and regulations, and always operate the watercraft in full conformity with any requirements and limitations imposed. 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, and all warning and caution labels on the 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, and all warning and caution labels.

EJU30740

Limitations on who may operate the watercraft

- Yamaha recommends a minimum operator age of 16 years old. Adults must supervise use by minors. Know your local operator age and training requirements.
- 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.

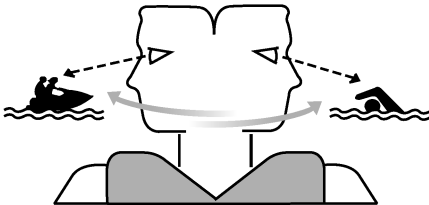
- Do not operate the watercraft with any passengers on board until you have considerable practice and experience riding alone. Operating the watercraft with passengers requires more skill. Take the time to become accustomed to the handling characteristics of the watercraft before trying any difficult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

Safety information

EJU30760

Cruising limitations

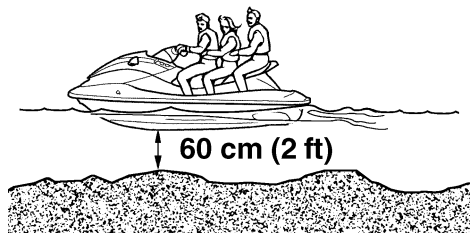
- Scan constantly for people, objects, and other watercraft. Be alert for conditions that limit your visibility or block your vision of others.



- 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-

cles, 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.

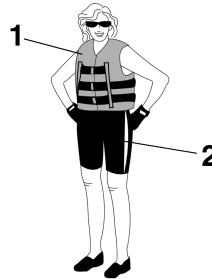


- Follow navigation rules, and state/provincial and local laws that apply to watercraft.

EJU30820

Operation requirements

- All riders must wear a personal flotation device (PFD) that is approved by the appropriate authorities and 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 Authority-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.
- You must decide whether to wear a helmet while you ride for recreation. You should know that a helmet could help protect you in

Safety information

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. If you will be engaging in closed-course competition, follow the helmet requirements of the sanctioning organization.

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

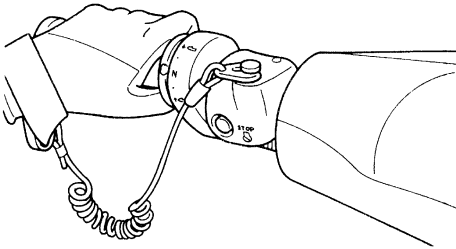


- For reasons of safety and proper care of the watercraft, always perform the pre-operation checks listed on page 51 before operating the watercraft.
- The operator and passengers should always keep their feet on the floor of the footwell when the watercraft is in motion. Lifting your feet increases 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 “Safe boating rules” and be sure to check behind you before making a turn. (See “Safe boating rules” on page 19.)

EJU30840

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.
- Visual distress signals
It is recommended that a pyrotechnic device, which is approved by the appropriate authorities, be stored in a waterproof container on your watercraft. A mirror can also be used as an emergency signal. Contact a Yamaha dealer 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.

Safety information

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.

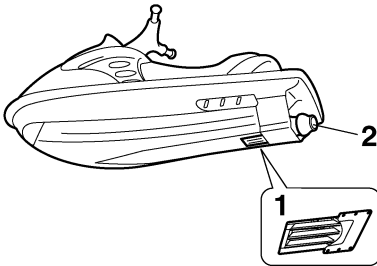
EJU30920

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

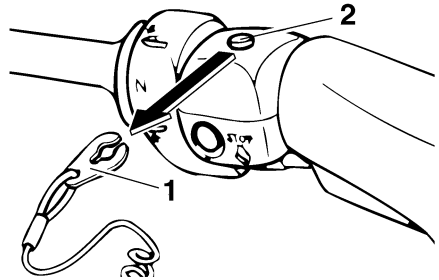
- Reverse can be used to slow down or stop during slow-speed maneuvering, such as when docking. Once the engine is idling, shift into reverse and gradually increase engine speed. Make sure that there are no obstacles or people behind you before shifting into reverse.
- Keep away from the intake grate 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.



- 1 Intake grate
- 2 Jet thrust nozzle

- 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.



- 1 Clip
- 2 Engine shut-off switch

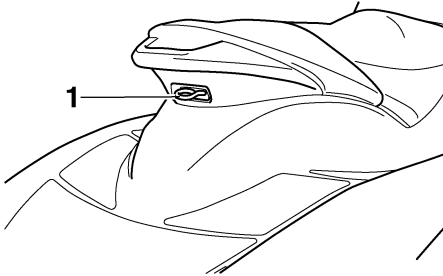
Safety information

EJU30950

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 local water-skiing regulations in effect for the waters in which you will be operating.

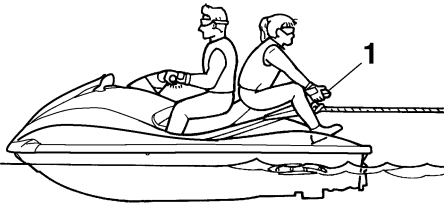
The operator should be comfortable carrying passengers before attempting to pull a skier. The following are some important considerations for minimizing risks while water-skiing.

- 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 many places it

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

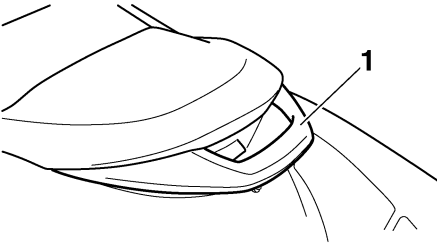
The spotter should sit astride the rear of the seat and hold onto the handgrip with both feet firmly on the floor of the footwell for proper balance while facing to the rear to

watch the skier's hand signals and condition.



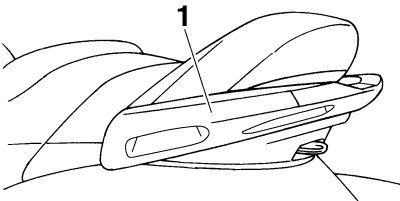
1 Handgrip

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.

Safety information

EJU30970

Safe boating rules

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.

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.

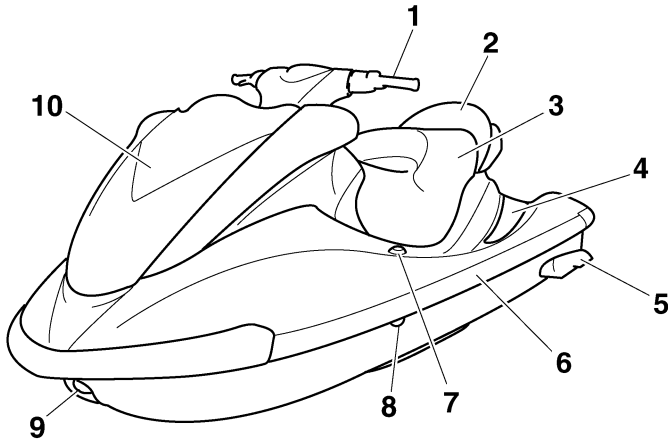
Remember, pollution can be harmful to the environment. Do not refuel or add oil where a spill could cause damage to nature. Remove your watercraft from the water and move it away from the shoreline before refueling. And keep your surroundings pleasant for the people and wildlife that share the waterways: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

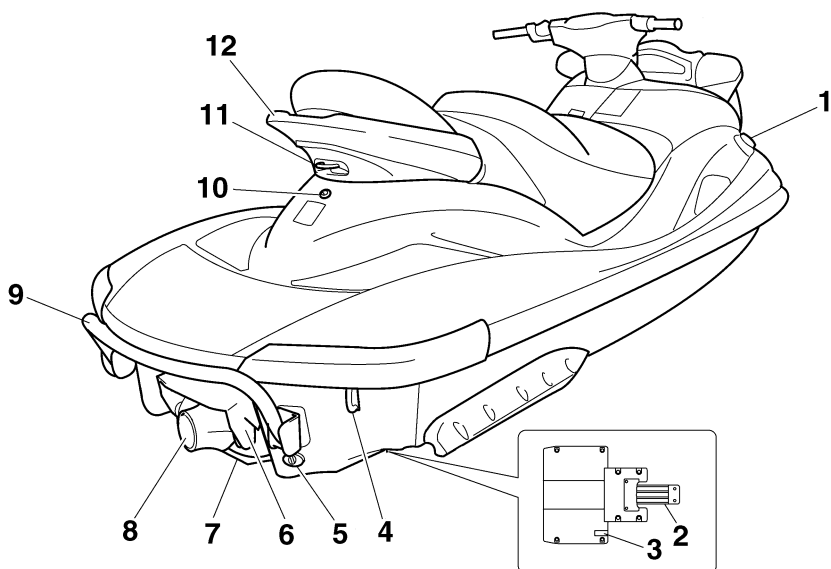
Front view



- 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

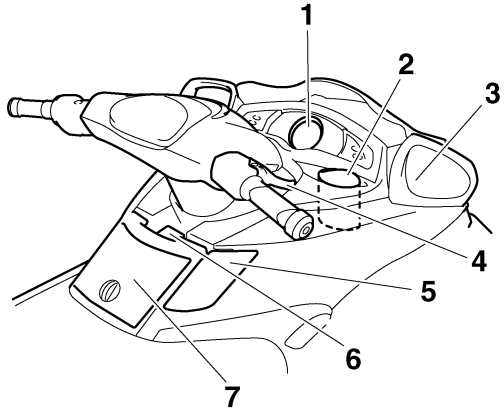
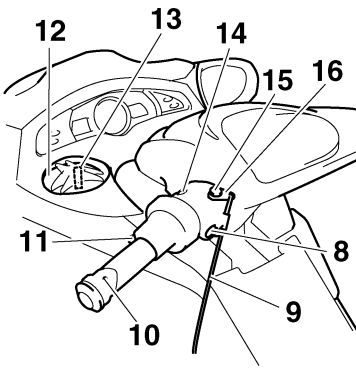
Rear view



- 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

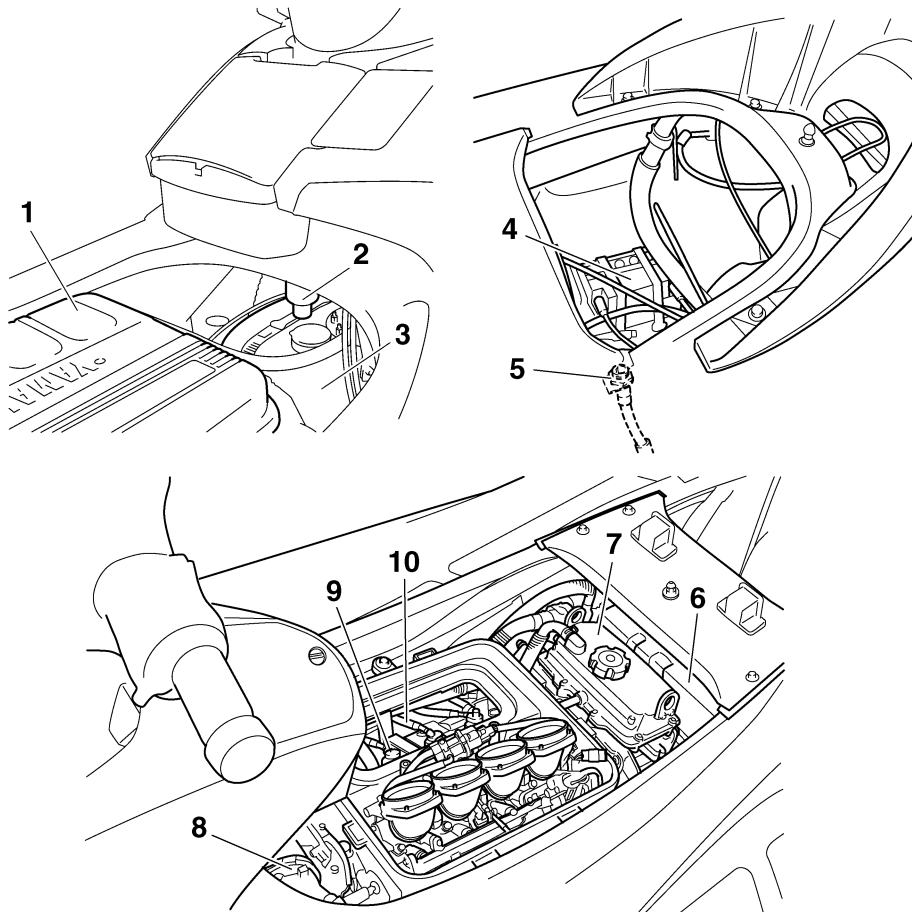
Control system



- 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 Muffer
- 9 Spark plugs/Spark plug caps/Ignition coils
- 10 Spark plug lead

Features and functions

EJU31020

Operation of controls and other functions

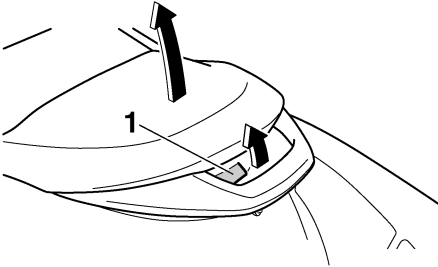
EJU31040

Seats

To remove the rear seat:

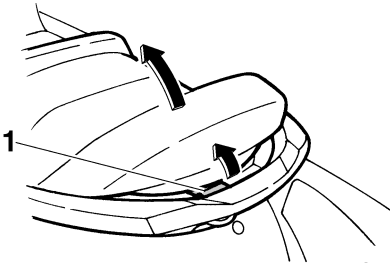
Pull the rear seat latch up, and then pull the seat off.

FX High Output



1 Seat latch

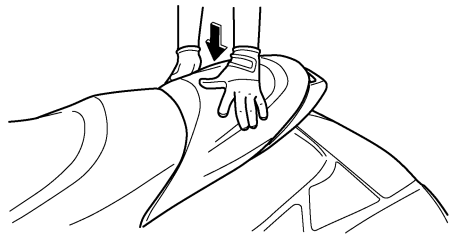
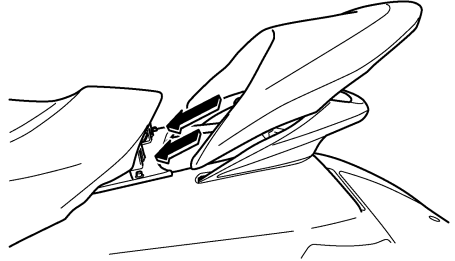
FX Cruiser High Output



1 Seat latch

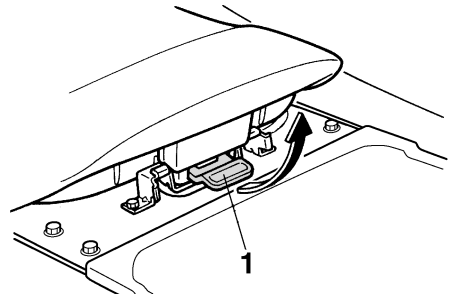
To install the rear seat:

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.

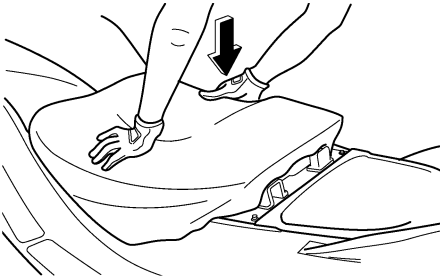
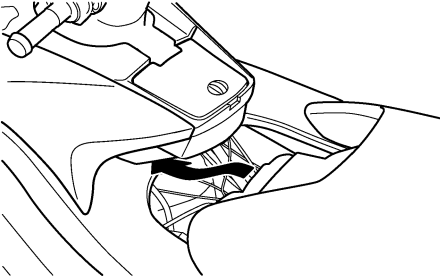


1 Seat latch

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.

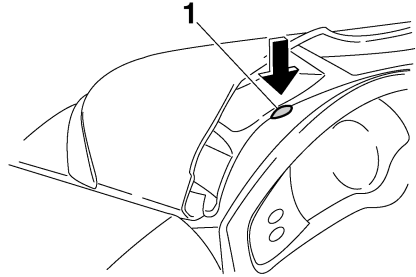
NOTE:

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

EJU31061

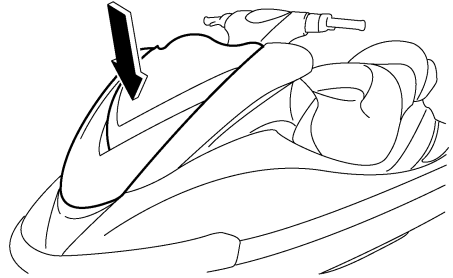
Hood

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:

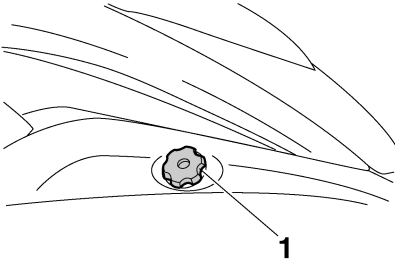
Make sure that the hood is securely closed before operating the watercraft.

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.

EJU36270

Remote control transmitter

The lock and unlock modes of the Yamaha Security System are selected using the remote control transmitter. (See “Yamaha Security System” on page 33 for information on using the remote control transmitter.)



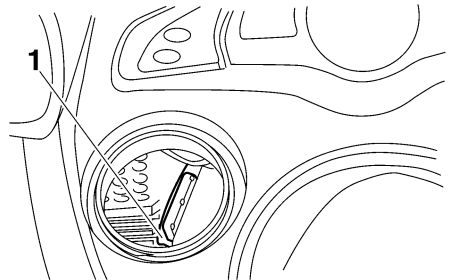
ECJ00930

CAUTION:

The lock and unlock modes of the Yamaha Security System 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

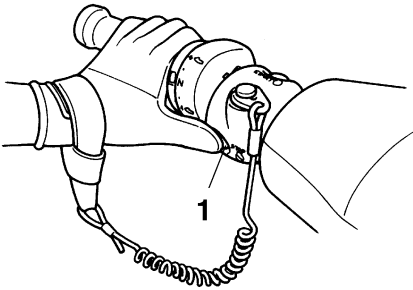
NOTE:

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

EJU31150

Engine stop switch

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

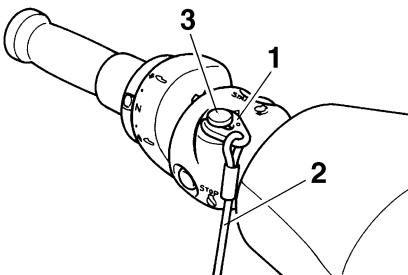


1 Engine stop switch

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.

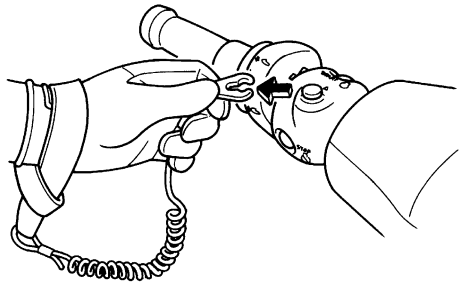


- 1 Clip
- 2 Engine shut-off cord
- 3 Engine shut-off switch

EWJ00010

WARNING

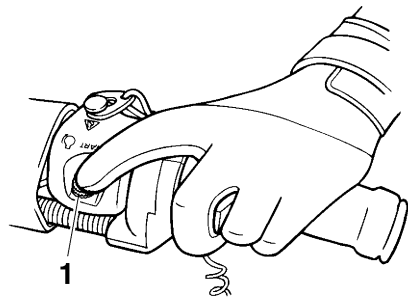
- Always attach the engine shut-off cord to your left wrist and the clip to the engine shut-off switch **BEFORE** starting the engine.
- To prevent accidental starting of the engine or unauthorized use by children or others, always remove the clip from the engine shut-off switch when the engine is not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



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

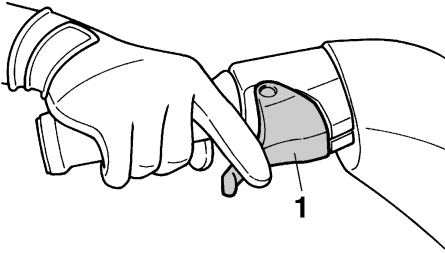
Features and functions

squeezed. (See page 33 for Yamaha Security System lock and unlock mode selection procedures.)

EJU31210

Throttle lever

Squeeze the throttle lever to increase engine speed.



1 Throttle lever

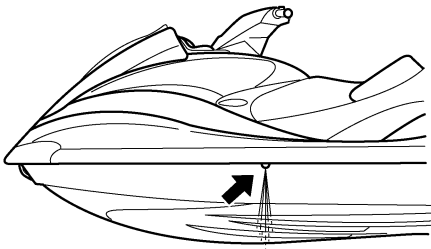
Release the throttle lever to decrease engine speed or to return it to the idle position.

EJU31240

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 40 and 94 for more information.)

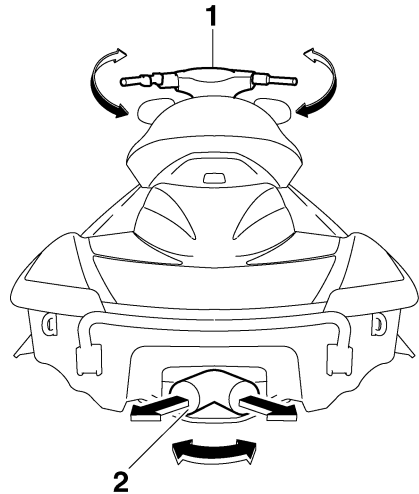
NOTE:

- 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.

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

Features and functions

the speed and degree of a turn, throttle must always be applied when attempting a turn, except at trolling speed.

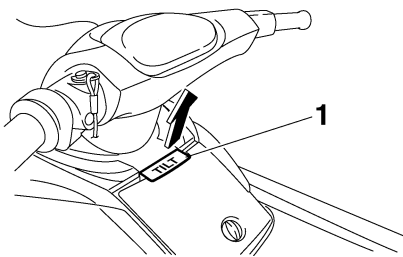
This model is equipped with the Yamaha Engine Management System (YEMS) that includes an off-throttle steering (OTS) system. It will activate at planing speeds should you attempt to steer the watercraft after releasing the throttle lever. The OTS system assists in turning by continuing to supply some 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

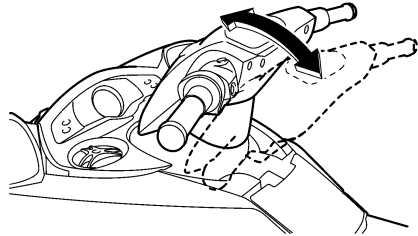
Tilt lever

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

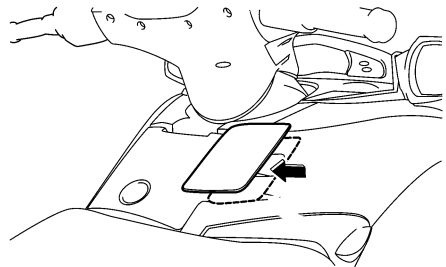
WARNING

- **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, 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.



Features and functions

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.**

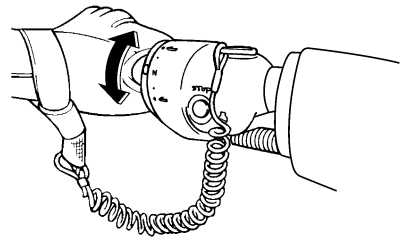
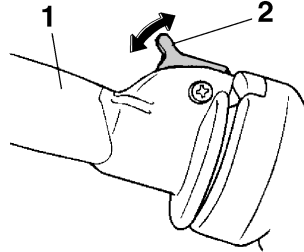
To shift into forward:

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

EJU31320

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.

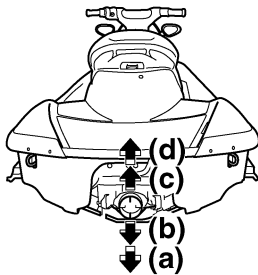
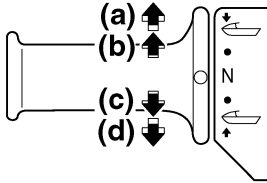


- 1 Quick Shift Trim System (QSTS) selector
- 2 QSTS selector lock lever

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 4000 r/min or less.
- (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.

ECJ00010

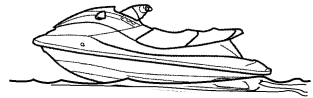
CAUTION:

Do not turn the QSTS selector while operating the watercraft at full throttle, otherwise damage could occur to the QSTS.

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

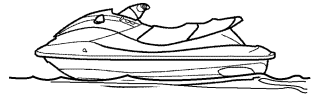
To enhance particular types of performance, select bow down or bow up.

(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.

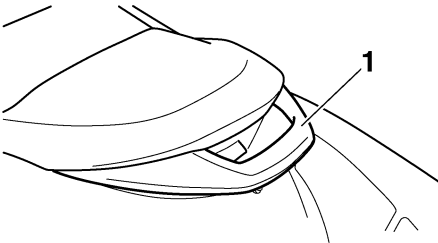
In some conditions, however, the watercraft may tend to “porpoise” (hop in the water). If the watercraft is porpoising, select neutral or bow down.

EJU31360

Handgrip

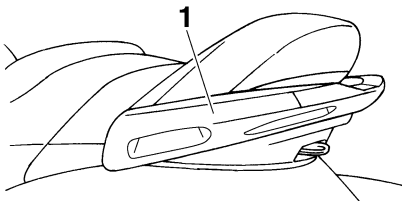
The handgrip provides a handhold for boarding the watercraft and for a spotter when facing rearward.

FX High Output



1 Handgrip

FX Cruiser High Output



1 Handgrip

EWJ00020

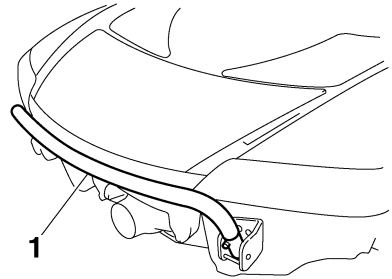
WARNING

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

EJU34860

Reboarding step

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



1 Reboarding step

ECJ00740

CAUTION:

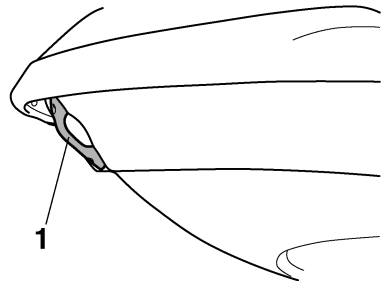
Use the reboarding step only to board the watercraft in the water. Do not use the reboarding step for lifting the watercraft, as a footstep when the watercraft is on land, or for any other purpose. The watercraft can be damaged.

EJU34870

Bow eye

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

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



1 Bow eye

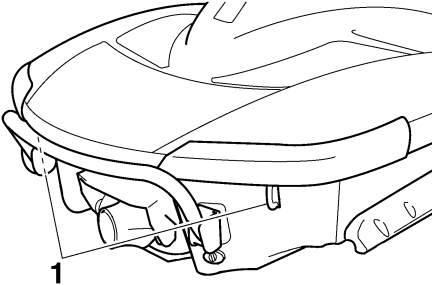
Features and functions

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.



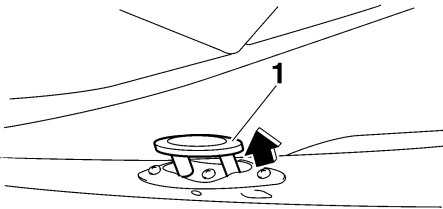
1 Stern eye

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.

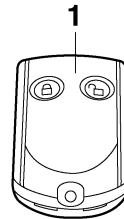
EJU36290

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.

This watercraft is equipped with a remote control transmitter that is used to select the lock and unlock modes of the security system. Since the watercraft is programmed to recognize the internal code from this transmitter only, the security system mode can only be changed with this transmitter.

If you lose the remote control transmitter or it does not operate properly, contact a Yamaha dealer.



1 Remote control transmitter

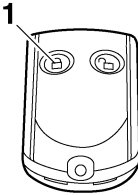
EJU36301

Yamaha Security System lock and unlock modes

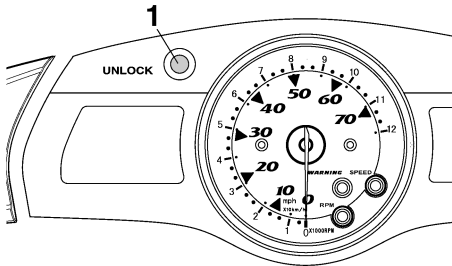
The lock and unlock modes of this system can only be selected while the engine is stopped. When the lock button on the remote control transmitter is pressed, the beeper sounds

Features and functions

once and the “UNLOCK” indicator light goes off. This indicates the lock mode is selected and the engine cannot be started.

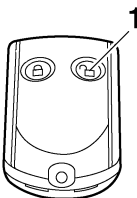


1 Lock button



1 “UNLOCK” indicator light

When the unlock button on the remote control transmitter is pressed, the beeper sounds twice and the “UNLOCK” indicator light comes on. This indicates the unlock mode is selected and the engine can be started.



1 Unlock button

Number of beeps	Yamaha Security System mode	Engine can be started
1 beep	Lock	NO
2 beeps	Unlock	YES

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 will turn off. If this occurs, press the lock button on the transmitter to select the lock mode, and then press the unlock button again to select the unlock 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.

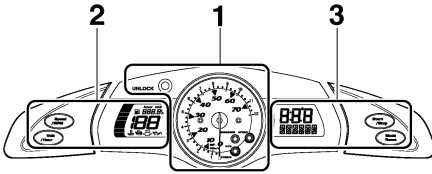
EJU36311

Multifunction information center

The multifunction information center is equipped with the following three main com-

Features and functions

ponents 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)

ECJ00941

CAUTION:

Do not run the engine for more than 15 seconds without supplying water or over 6000 r/min on land when checking the operation of the multifunction information center, otherwise the engine could over-heat.

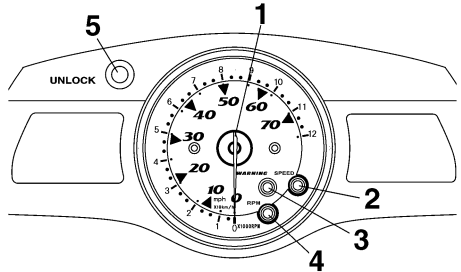
NOTE:

- When the multifunction information center starts operating, the analog speedometer/tachometer makes one sweep, all displays light up for 2 seconds, and then it 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

EJU34941

Analog speedometer/tachometer

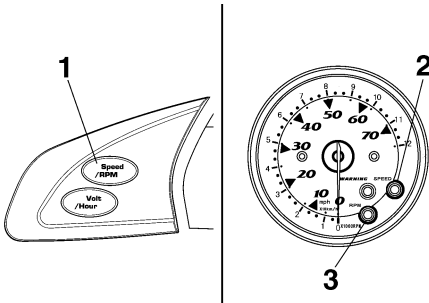
The analog speedometer/tachometer can be used as a speedometer or a tachometer.

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

Features and functions

“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

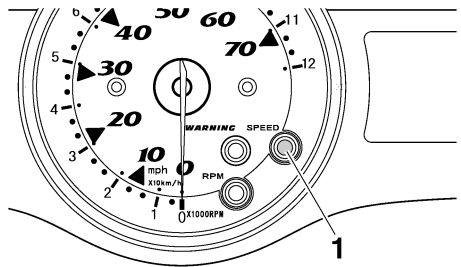
The analog tachometer shows the engine speed (r/min).

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

EJU34951

“SPEED” indicator light

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



- 1 “SPEED” indicator light

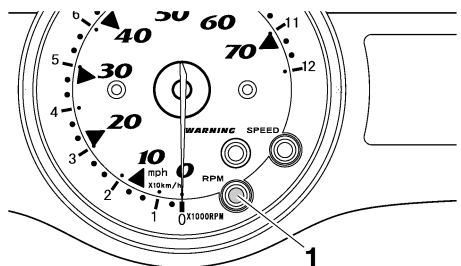
The “SPEED” indicator light blinks three times in the following instances:

- 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.



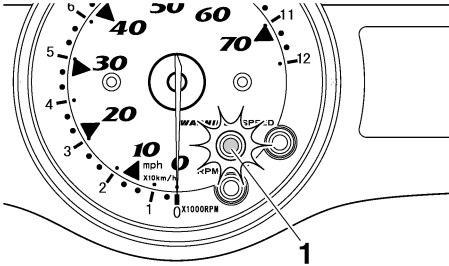
- 1 “RPM” indicator light

Features and functions

EJU34980

“WARNING” indicator light

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

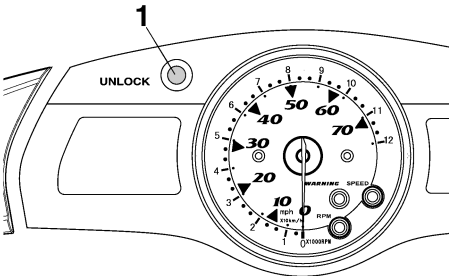


1 “WARNING” indicator light

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 33 for more information.)

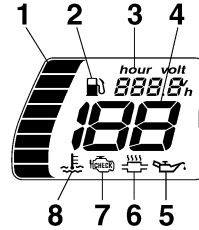


1 “UNLOCK” indicator light

EJU35021

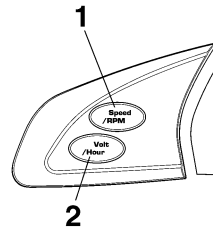
Left multifunction display and operation buttons

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 Exhaust temperature warning indicator
- 7 Check engine warning indicator
- 8 Engine overheat warning indicator

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



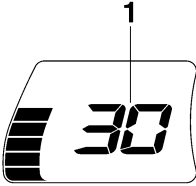
- 1 “Speed/RPM” button
- 2 “Volt/Hour” button

Features and functions

EJU35042

Digital speedometer

The digital speedometer shows the watercraft speed against water.

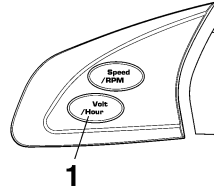


1 Digital speedometer

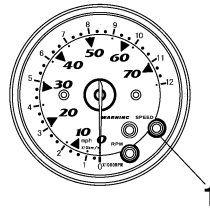
NOTE:

- 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

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



1 “Volt/Hour” button



1 “SPEED” indicator light

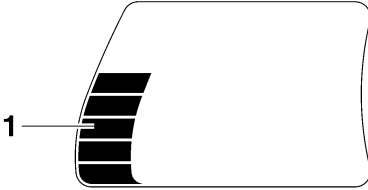
EJU31511

Fuel level meter

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

Features and functions

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



1 Fuel level meter

NOTE:

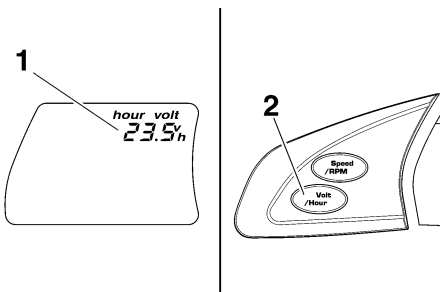
The fuel level is most accurate when the watercraft is sitting level on a trailer or in the water.

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.

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.

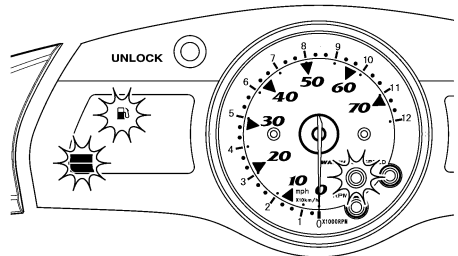
When the battery voltage is normal, the voltmeter displays approximately 12 volts.

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:

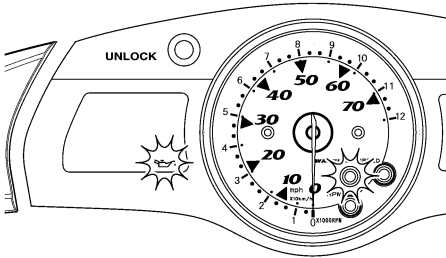
Press any button on the multifunction information center to stop the buzzer.

Features and functions

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 53 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.

EJU36401

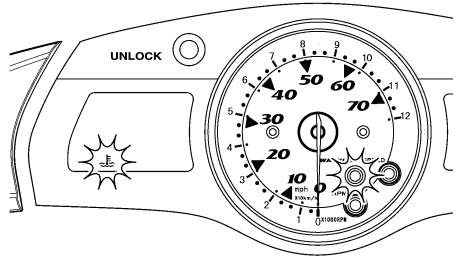
Engine overheat warning indicator

This model is equipped with an engine overheat warning system.

If the engine starts to overheat, the engine overheat warning system will be activated and, in some cases, the warning system will cut the ignition to the engine.

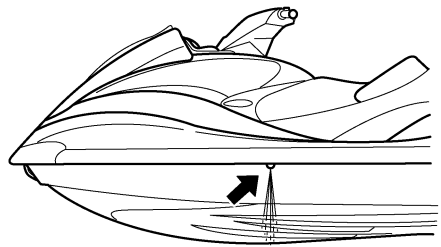
If the “WARNING” indicator light and the engine overheat warning indicator begin to blink, and the buzzer sounds intermittently, immedi-

ately reduce the engine speed and return to shore.



If the “WARNING” indicator light and the engine overheat warning indicator come on, and the buzzer sounds continuously, the warning system will cut the ignition. The engine cannot be started until it cools down, so it may be necessary to have the watercraft towed back to the shore. (See “Towing the watercraft” on page 97 for towing procedures.)

After the engine cools down, start the engine, 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.



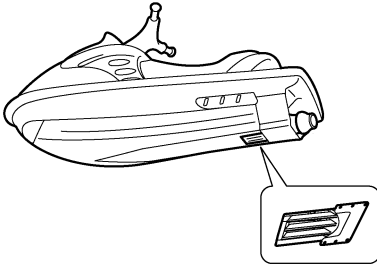
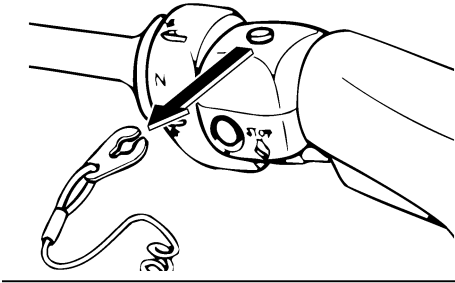
EWJ00050

WARNING

Before attempting to remove weeds or debris from the intake grate or impeller, shut the engine off and remove the clip from the

Features and functions

engine shut-off switch. Severe injury or death could result from coming in contact with the rotating parts of the jet pump.



ECJ00951

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.

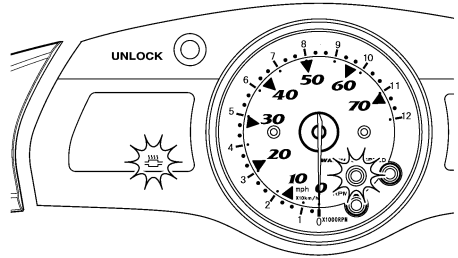
EJU36321

Exhaust temperature warning indicator

This model is equipped with an exhaust temperature warning system.

If the exhaust temperature becomes too hot, the “WARNING” indicator light and the ex-

haust temperature warning indicator begin to blink, and the buzzer sounds intermittently.



If this occurs, reduce the engine speed and return to shore to allow the exhaust system to cool down.

EGJ00960

CAUTION:

This model is equipped with a catalytic converter.

If the “WARNING” indicator light, exhaust temperature warning indicator, and buzzer come on, reduce the engine speed (below 6000 r/min), return to shore, and have a Yamaha dealer check the watercraft.

NOTE:

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

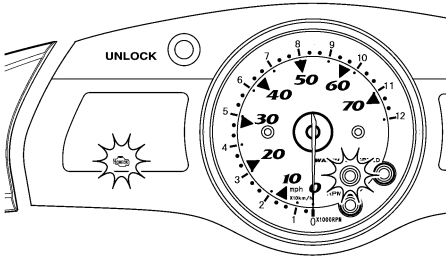
EJU35131

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:

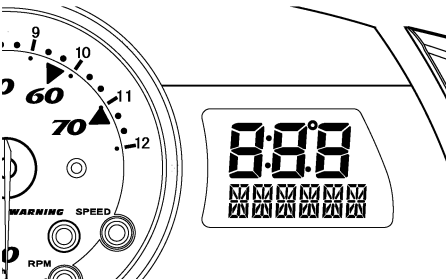
Press any button on the multifunction information center to stop the buzzer.

EJU35033

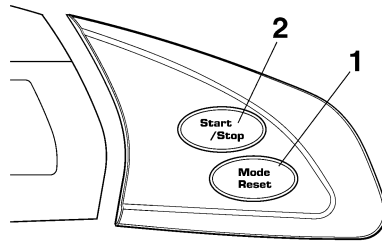
Right multifunction display and operation buttons (for FX Cruiser High Output)

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.

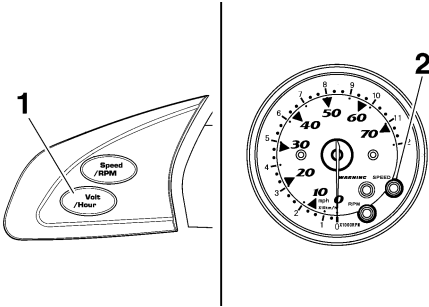
Compass → Average speed → Tripmeter → Trip timer → Fuel consumption per hour → Fuel consumption per kilometer/mile → Water temperature → Air temperature

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 oper-

Features and functions

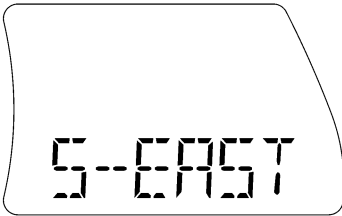
ating, or if the display units are switched to miles/gallons/degrees Fahrenheit.



- 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.

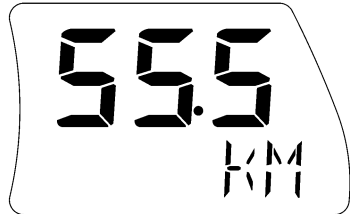
Average speed

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

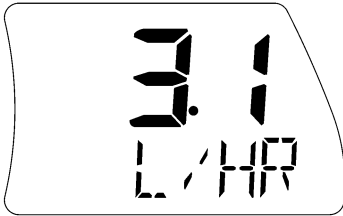
This display shows the hours of operation "TRIP TM" since it was reset.



Features and functions

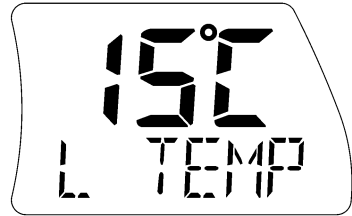
Fuel consumption per hour

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



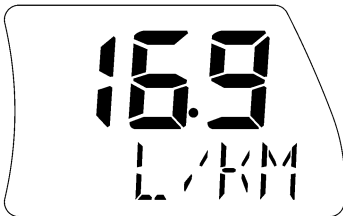
Water temperature

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



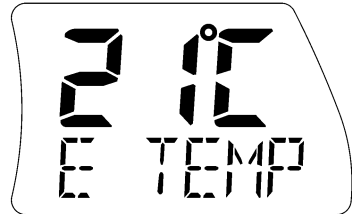
Fuel consumption per kilometer/mile

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.

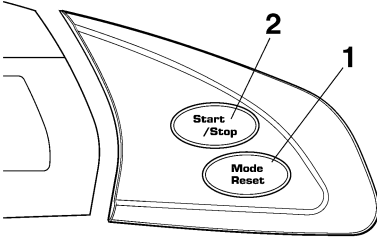
To start the measurements, push the “Start/Stop” button for less than 1 second. The beeper sounds once.

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:

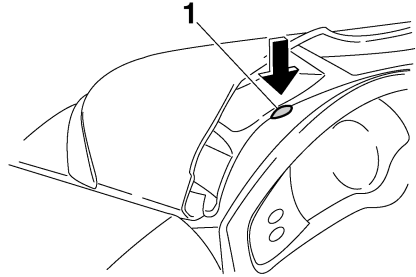
- Make sure that the storage compartments are closed securely before operating the watercraft.
 - The front storage compartment, glove compartment, and seat storage compartment are not designed to be watertight. If you carry objects that must be kept dry, such as the manuals, put them in a waterproof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

EJU35151

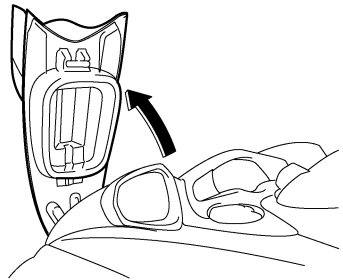
Front storage compartment

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:

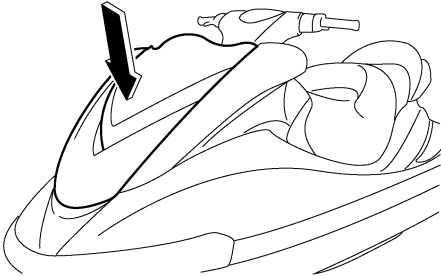
Capacity:

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:

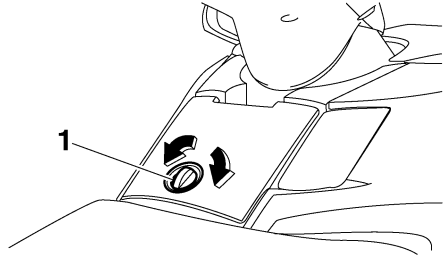
Make sure that the front storage compartment is securely closed before operating the watercraft.

EJU35161

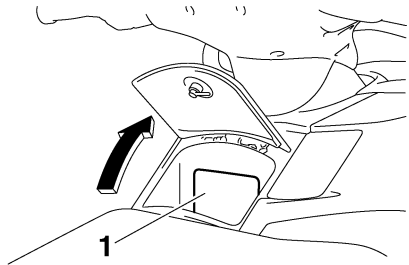
Glove compartment

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.

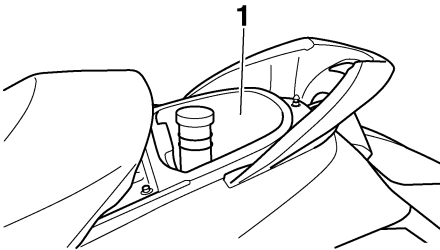
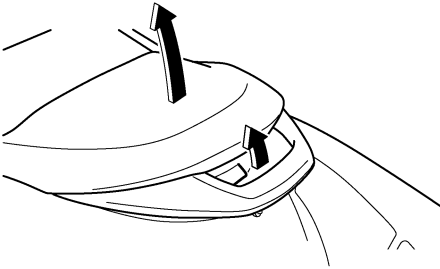
EJU31760

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 24 for rear seat removal and installation procedures.)



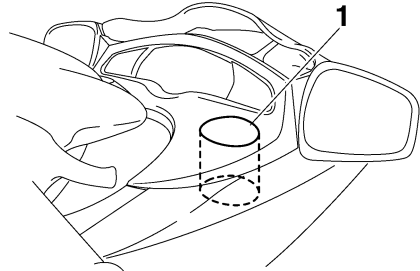
1 Seat storage compartment

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:

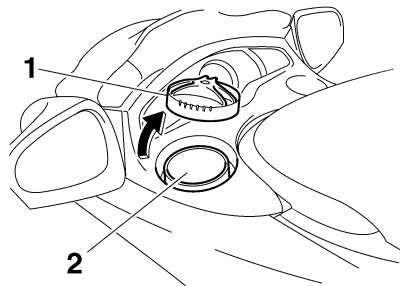
Do not place beverages in the beverage holder when operating the watercraft.

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.

Operation

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.

EJU36330

Gasoline

EWJ00280



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.

ECJ00320

CAUTION:

- Do not use leaded gasoline. Leaded gasoline can seriously damage the catalytic converter.
- 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
10W-30				SG
				SH
				SJ
				SL

ECJ00280

CAUTION:

Use only 4-stroke engine oil.

EJU31950

Filling the fuel tank

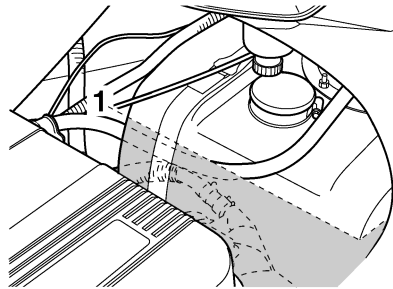
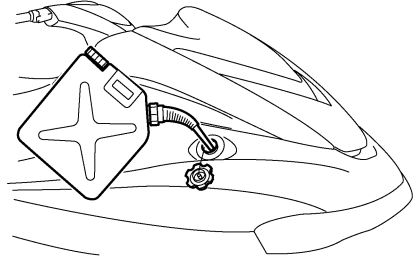
ECJ00290

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 24 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)

Operation

EJU31980

Pre-operation checks

EJU31990

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.

EWJ00410



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.	53
Bilge	Check for water and fuel and drain if necessary.	54
Stern drain plugs	Check for proper installation.	55
Throttle lever	Check that the throttle lever springs back smoothly.	57
Steering system	Check for proper operation. Check that the handlebars are locked in place.	57
Shift lever and reverse gate	Check for proper operation.	57
QSTS	Check for proper operation.	58
Fuel and oil	Check the fuel and oil levels and replenish if necessary. Check the hoses and tanks for leakage.	53, 53
Water separator	Check for water and drain if necessary.	54
Battery	Check the electrolyte level and battery condition.	55
Hood	Check that the hood is securely closed.	25
Front and rear seats	Check that the seats are securely installed.	24
Hull and deck	Check the hull and deck for cracks and other damage.	53
Jet intake	Check for debris and remove if necessary.	59
Fire extinguisher	Check the condition and replace if necessary.	56
Engine shut-off cord	Check the condition and replace if frayed or broken.	59
Switches	Check the start switch, engine stop switch, and engine shut-off switch for proper operation.	60
AFTER LAUNCH		
Cooling water pilot outlet	Check that water is discharged while the engine is running and the watercraft is in the water.	60
Multifunction information center	Check for warning indications and proper operation.	60

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

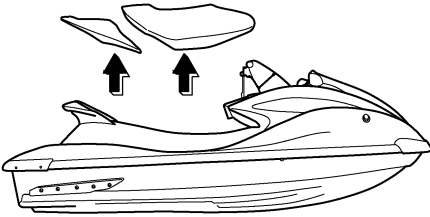
EJU32330

Engine compartment

Ventilate the engine compartment before each use.

To ventilate the engine compartment, remove the seats. (See page 24 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

WARNING

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 83 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 24 for seat removal and installation procedures.)
- (3) Check the fuel level in the fuel tank and replenish if necessary. (See page 50 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 76 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.
-

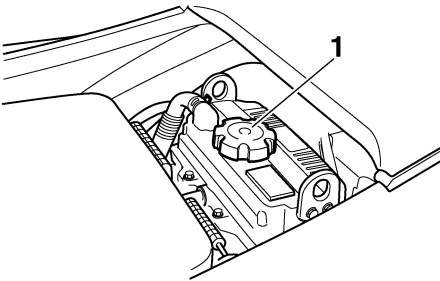
To check the engine oil level:

- (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.

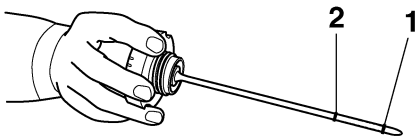
NOTE:

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 24 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

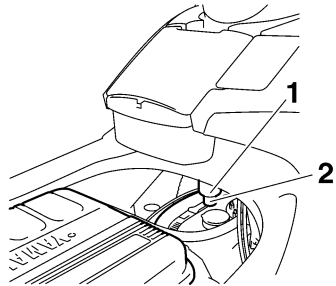
- (5) If the engine oil level is below the minimum level mark, add enough oil so that the oil level is between the minimum and maximum level marks on the dipstick,

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.

EJUS2420

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.

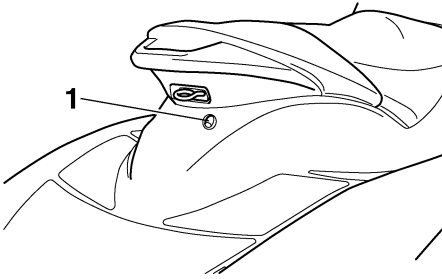
EJUS2450

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**

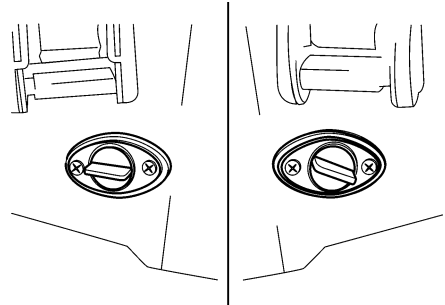
could be damaged, allowing water to enter the engine compartment.

- **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:

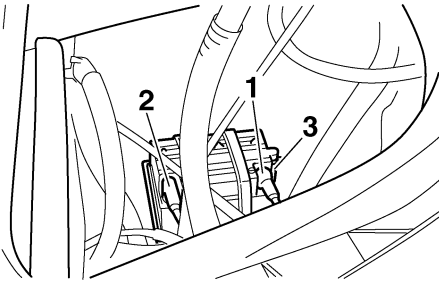
- **Before installing the stern drain plugs, clean the drain plug threads to remove any foreign materials, such as dirt or sand. Otherwise, the stern drain plugs could be damaged, allowing water to enter the engine compartment.**
- **Make sure that the stern drain plugs are tightened securely before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

EJU32480

Battery

Check the battery condition and the electrolyte level.

Check that the battery leads are tightened securely and that there is no corrosion on the battery terminals.



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

EWJ00450

WARNING

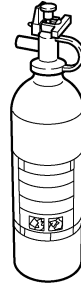
- The battery must always be fully charged and in good condition. Loss of battery power may leave you stranded. Never operate the watercraft if the battery does not have sufficient power to start the engine or if it shows any other signs of decreased power.
- Be sure to connect the breather hose to the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

EJU32580

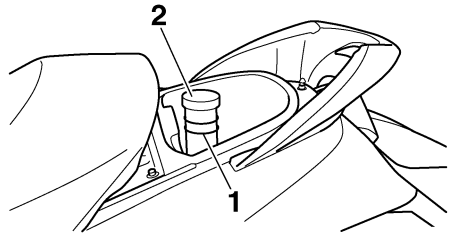
Fire extinguisher

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,

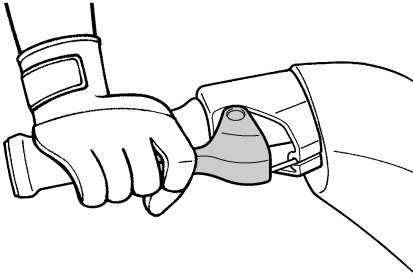
Operation

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

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

WARNING

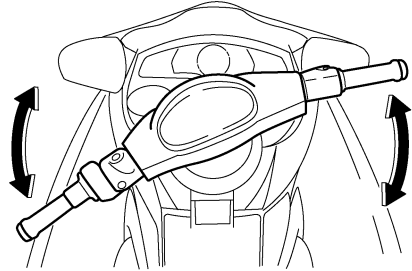
Before starting the engine, always check the operation of the throttle lever.

EJU32610

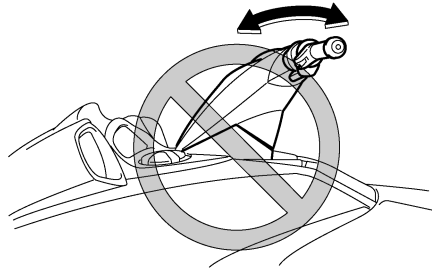
Steering system

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 29 for more information.)

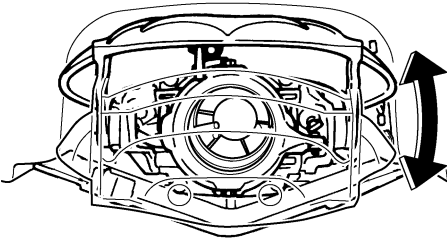
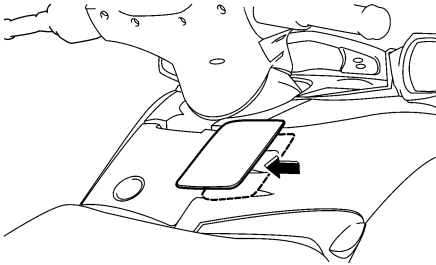


EJU32630

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.



EWJ00480

WARNING

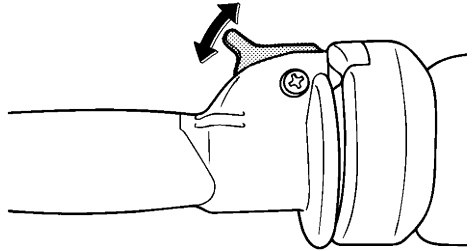
- Make sure that the throttle lever is completely released and that the engine is at idle before shifting into reverse.
- Do not use the reverse function to slow down or stop the watercraft as it could cause you to lose control, be ejected, or impact the handlebars.
- Use reverse for slow-speed maneuvering 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

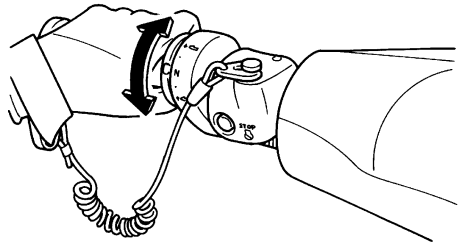
Quick Shift Trim System (QSTS)

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.



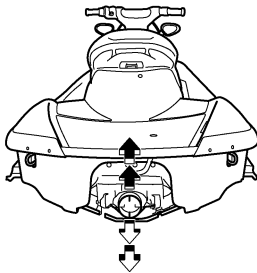
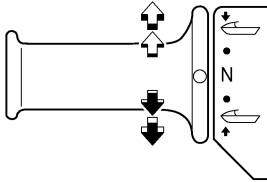
- (2) Check that the QSTS selector turns smoothly when the lever is squeezed and check that the selector locks in place at each position when the lever is released.



- (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 94 for jet intake cleaning procedures.)

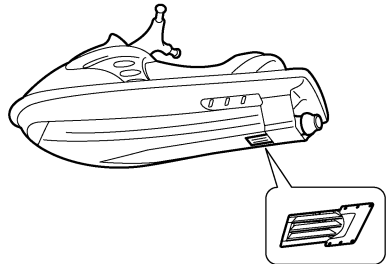
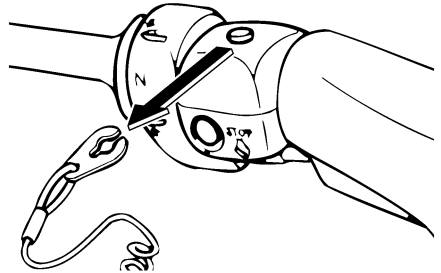
EWJ00470

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.

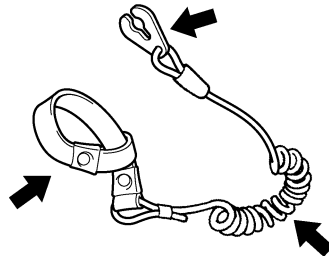
- Stop the engine and remove the clip from the engine shut-off switch before removing any debris or weeds, which may have collected around the jet intake.



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

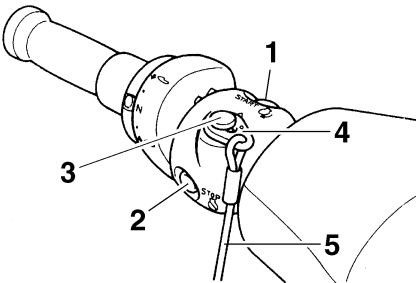
ECJ00410

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 27 to 27 for information on proper operation of the start switch, the engine stop switch, and the engine shut-off switch.)



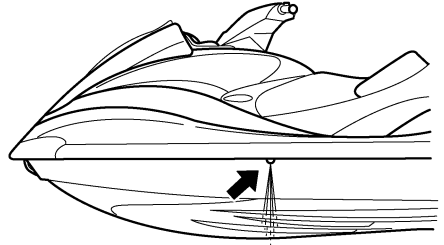
- 1 Start switch
- 2 Engine stop switch
- 3 Engine shut-off switch
- 4 Clip
- 5 Engine shut-off cord

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 28 for more information.)



EJU32710

Multifunction information center

Check the multifunction information center for proper operation. (See page 34 for information on proper operation of the multifunction information center.)



Operation

EJU32740

Operation

EWJ00510

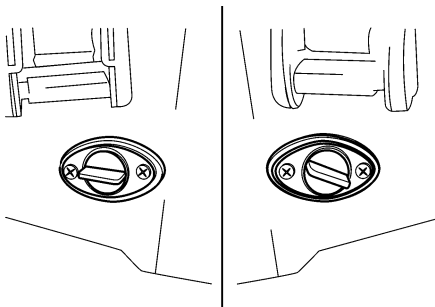
WARNING

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 53 for engine oil checking procedures.)

- (1) Launch the watercraft and start the engine. (See page 61 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 33 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

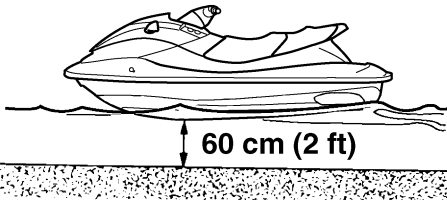
Starting the engine

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 33 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.



EWJ00570

WARNING

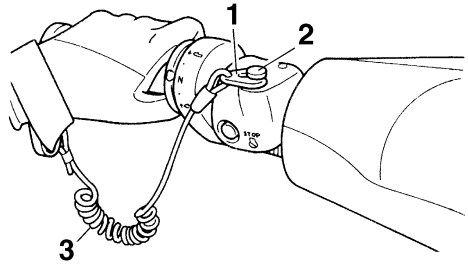
Never operate in water that is less than 60 cm (2 ft) deep, otherwise you increase your chance of hitting a submerged object, which could result in injury.

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.

- (3) Attach the engine shut-off cord to your left wrist, and then attach the clip to the engine shut-off switch.



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

EWJ00580

WARNING

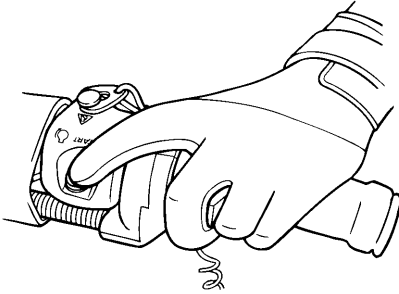
Check that the engine shut-off cord is not frayed or broken, and keep it free from the handlebars so that the engine stops if the operator falls off. The engine shut-off cord may not pull free if wrapped around the handlebars when the operator falls off, allowing the watercraft to continue to run and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

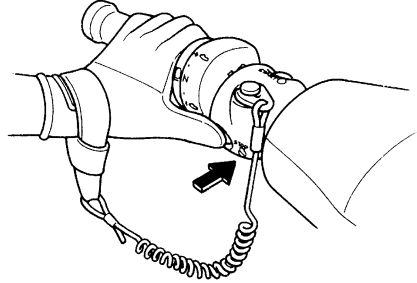
CAUTION: _____

- 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 33 for Yamaha Security System lock and unlock mode selection procedures.)

EJU32900

Operating your watercraft

EJU32960

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, and all warning and caution labels on the watercraft. Pay particular attention to the safety information on page 10. 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.

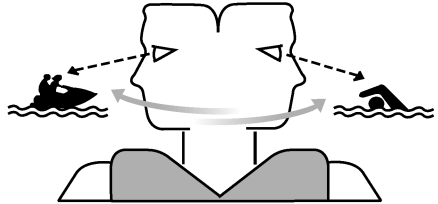
EJU33000

Learning to operate your watercraft

Before operating the watercraft, always perform the pre-operation checks listed on page 51. The short time spent checking the watercraft will reward you with added safety and reliability.

Check 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 PFD that is approved by the appropriate authorities and 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 fabrics, like those used in bicycle shorts. A full wetsuit can also protect against hypothermia

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 fabrics, like those used in bicycle shorts. A full wetsuit can also protect against hypothermia

Operation

(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.

EJU33060

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 PFD that is approved by the appropriate authorities 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 provided, 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 all local laws regarding water-skiing, such as those for skier-down flags, rearward-facing spotter, and other requirements.

EJU33080

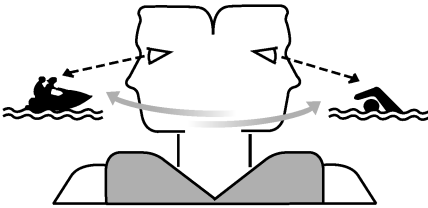
Starting the watercraft

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.**

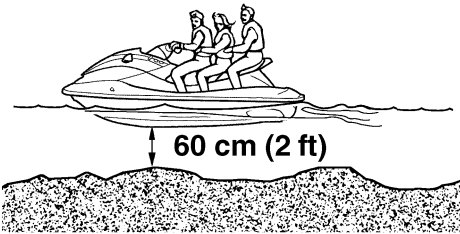
- Practice reboarding in shallow water before riding in deep water.



EJU33090

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.



EWJ00640

⚠ 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.

ECJ00500

CAUTION:

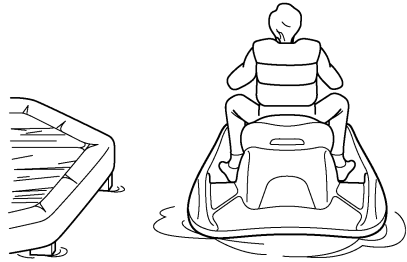
Never operate in water that is less than 60 cm (2 ft) deep, otherwise pebbles or sand could be sucked into the jet intake, causing impeller damage and engine overheating.

- (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

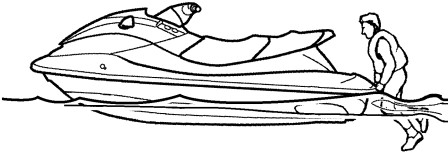
- The operator and passengers should practice boarding in shallow water before riding in deep water. Boarding in deep water requires more skill.
- The fatigue and exposure that could result after unsuccessful attempts to get back on the watercraft may increase the risk of injuries and drowning.

Operation

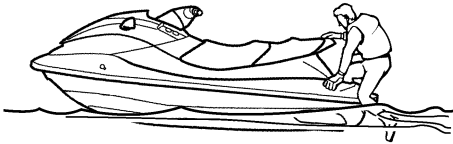
EJU36350

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.

EJU33161

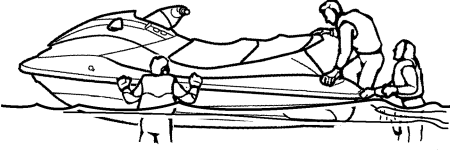
Boarding with passengers

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: _____

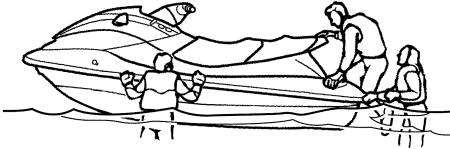
The heavier the total weight of the operator and passengers, the more difficult it will be to balance the watercraft. Do not operate the watercraft when the total weight exceeds 240 kg (530 lb) including any cargo. If it is difficult to balance the watercraft at a standstill, proceed as follows:

- (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.

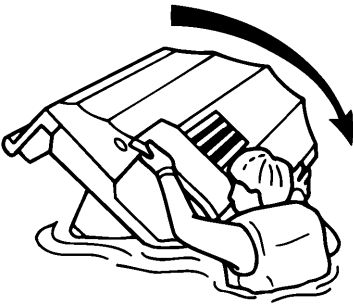
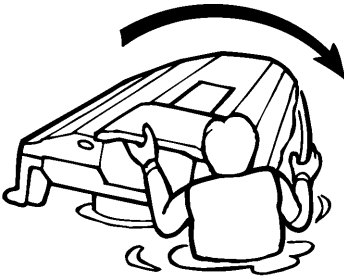
ECJ00530

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 97 or “Submerged watercraft” on page 97.)

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

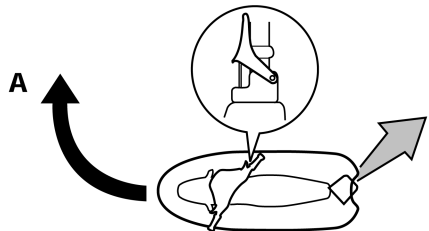
Turning the watercraft

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.

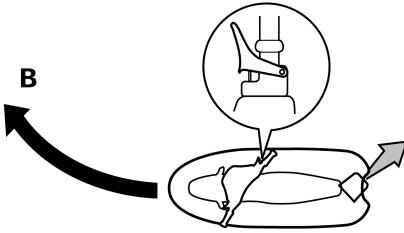
The amount of jet thrust, in addition to the position of the handlebars, determines how sharply you turn.

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



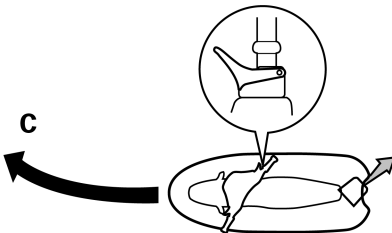
Operation

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

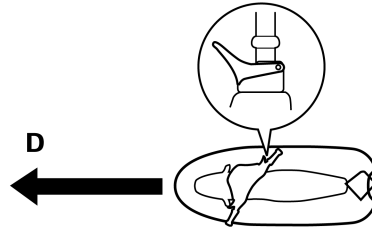


C. Releasing the throttle lever completely produces only minimum thrust. If you are traveling at speeds above trolling, you will have rapidly decreasing ability to steer without throttle. You may still have some turning ability immediately after releasing the throttle lever, but once the engine slows 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).

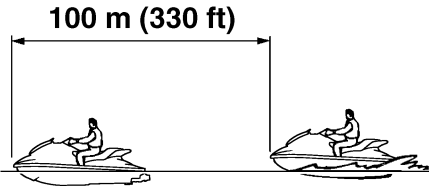
The OTS system assists in turning by continuing to supply some thrust while the watercraft is decelerating, but you can turn more sharply if you apply throttle while turning the handlebars. The OTS system does not function below planing speeds or when the engine is off. Once the engine slows down, the 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.

EGJ00490

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.

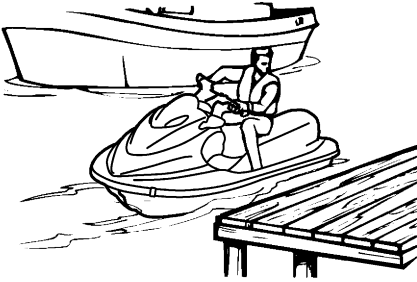
EJU33320

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.

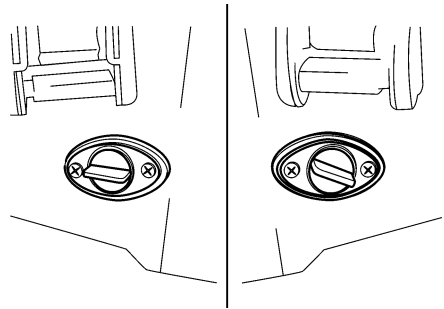
Operating in rough water or jumping waves can also crack the watercraft hull and deck, and damage internal parts. Avoid operating in rough water or bad weather conditions.

EJU36361

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 54 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 76 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.
 - (12) Allow the engine compartment to air dry completely before installing the seat.

ECJ00971

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 engine, causing severe engine damage.**
- **Do not run the engine for more than 15 seconds on land without supplying water, otherwise the engine could overheat.**
- **Do not run the engine over 6000 r/min on land, otherwise the catalytic converter could be seriously damaged.**

-
- (7) If the watercraft will be stored for a week or more, lubricate internal engine components to help prevent corrosion. (See page 77 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.

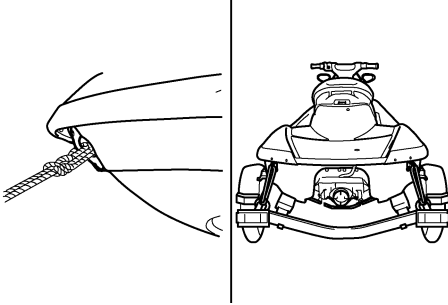
-
- (9) Wipe the engine and engine compartment dry with a clean cloth (repeat step 3, if necessary).
 - (10) Wipe the hull, handlebars, and jet unit dry with a clean cloth.
 - (11) Spray a rust inhibitor on metallic parts to minimize corrosion.

Operation

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.
-

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.

EJU36371

Flushing the cooling system

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

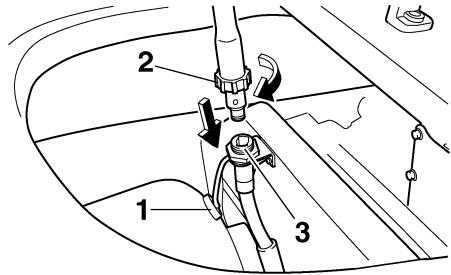
ECJ00971

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 engine, causing severe engine damage.
- Do not run the engine for more than 15 seconds on land without supplying water, otherwise the engine could overheat.
- Do not run the engine over 6000 r/min on land, otherwise the catalytic converter could be seriously damaged.

- (1) Remove the watercraft from the water and place it in a horizontal position.
- (2) Remove the rear seat and seat storage compartment. (See page 24 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.



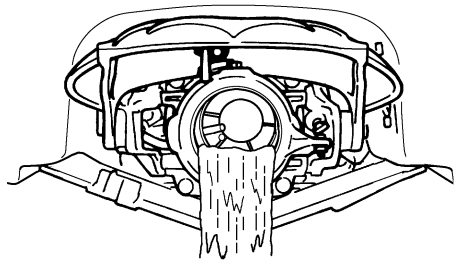
- 1 Flushing hose connector cap
- 2 Garden hose adapter
- 3 Flushing hose connector

- (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

Maintenance and care

water passages by alternately squeezing and releasing the throttle lever for 10 to 15 seconds, making sure not to run the engine over 6000 r/min.

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

EJU33600

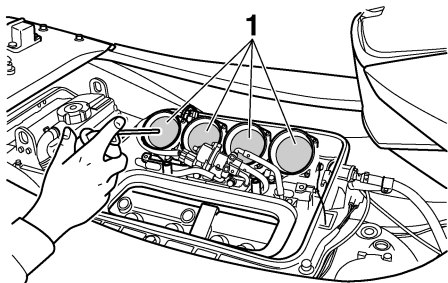
Lubrication

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 24 for seat removal and installation procedures.)
- (2) Remove the air filter case cover and the air filter element. (See page 84 for air filter case cover and air filter element removal and installation procedures.)
- (3) Spray a rust inhibitor 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.

ECJ00160

CAUTION:

Do not run the engine for more than 15 seconds, otherwise the engine could overheat.

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

NOTE:

Use a suitable marine grease applicator 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 87.

EJU36380

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.

Add approximately 550 ml (18.6 US oz, 19.4 Imp oz) of Yamaha Fuel Stabilizer and Conditioner to the fuel tank, and then top it off with fresh gasoline.

ECJ00140

CAUTION:

Use only Yamaha Fuel Stabilizer and Conditioner, otherwise the catalytic converter could be seriously damaged.

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.

EJU33730

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.
- (4) Wax the hull with a non-abrasive wax.

Maintenance and care

- (5) Wipe all vinyl and rubber components, such as the seat and engine compartment seals, with a vinyl protectant.

EJU33761

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**

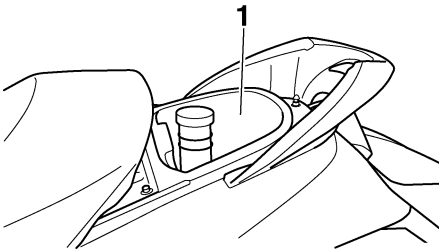
Maintenance and care

use. Consult a Yamaha dealer before attempting any modifications.

EJU33810

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.



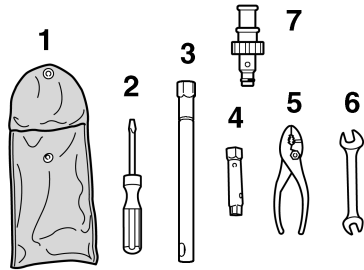
1 Storage compartment

NOTE:

To protect these materials from water damage, it would be a good idea to put them in a waterproof bag.

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 repairs. 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

EJU33820

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	●		●	●		86
Lubrication points	Lubricate			●/○	●/○		87
Intermediate housing	Lubricate	○		●	●		87
Fuel system	Check			○	○		83
Fuel tank	Check, clean			●/○	●/○		83
Trolling speed	Check, adjust			●/○	●/○		90
Throttle shaft	Check			○	○		—
Cooling water passages	Flush	●*					76
Water inlet strainer	Check, clean			○	○		—
Bilge strainer	Clean			○	○		—
Electric bilge pump strainer	Check, clean			○	○		—
Impeller	Check			○	○		—
Jet thrust nozzle angle	Check, adjust			●/○	●/○		85
Steering master	Check	○		○	○		—
QSTS mechanism	Check, adjust	○		○	○		—
Shift cable and reverse gate	Check, adjust			●/○	●/○		85
Throttle cable	Check, adjust	○		●	●		85
Stern drain plugs	Check, replace			○	○		55
Battery	Check, charge			●/○	●/○		88
Rubber coupling	Check					○	—
Engine mount	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	
Nuts and bolts	Check	○		○	○		—
Air filter element	Check			●	●		84
Engine oil	Replace	○		○	○		83
Oil filter	Replace			○	○		83
Valve clearance	Check, adjust					○	—

* This operation should be performed after every use.

Maintenance and care

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.

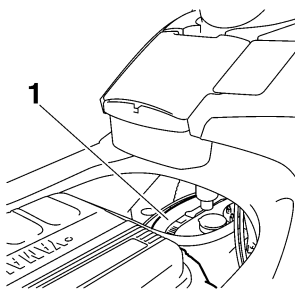
Check:

- 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

EJU34290

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, consult a Yamaha dealer.

NOTE:

Dispose of used oil according to local regulations.

Recommended engine oil:

See page 50.

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.

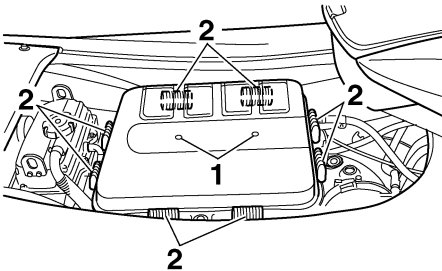
EJU34300

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:

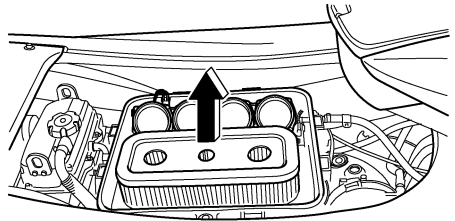
- (1) Remove the seats. (See page 24 for seat removal and installation procedures.)
- (2) Remove the air filter case cover screws, slide the locks open, and then remove the air filter case cover.



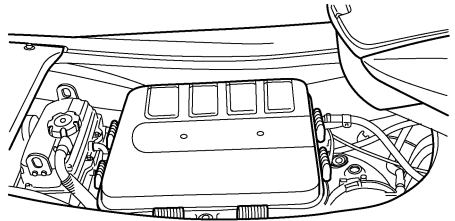
- 1 Air filter case cover screw
- 2 Lock

- (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.



- (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 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

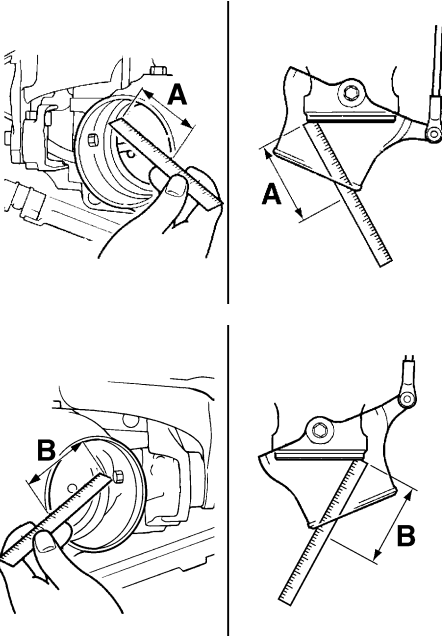
EJU34320

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.

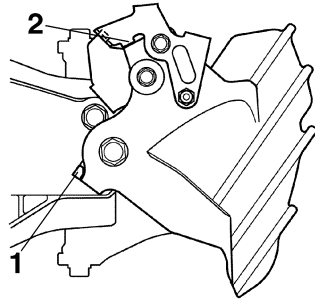
EJU34340

Checking the shift cable

Place the shift lever in the reverse position.

Make sure that the reverse gate makes contact with the stopper on the bracket, and that

the shift arm makes contact with the reverse gate.



- 1 Stopper
- 2 Shift arm

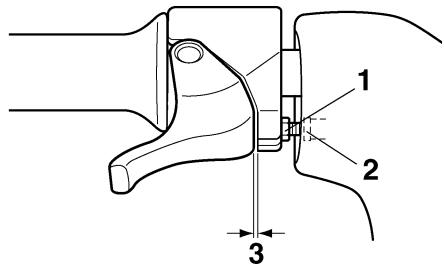
If the reverse gate does not reach the correct positions, have a Yamaha dealer service it.

EJU34360

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.

- (1) Squeeze and release the throttle lever. If the throttle lever does not return smoothly, have a Yamaha dealer service it.
- (2) Adjust the free play by loosening the locknut and turning the adjuster.



- 1 Locknut
- 2 Adjuster
- 3 Throttle lever free play

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

Maintenance and care

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 84 for air filter element removal and installation procedures.)
- (2) Remove the spark plug cap.

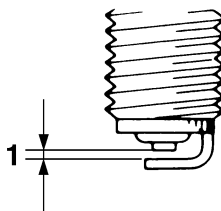
ECJ00210

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.
- (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.

Maintenance and care

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.

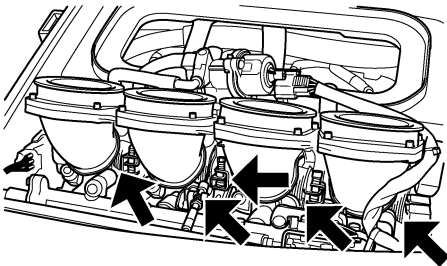
EJU34432

Lubrication points

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

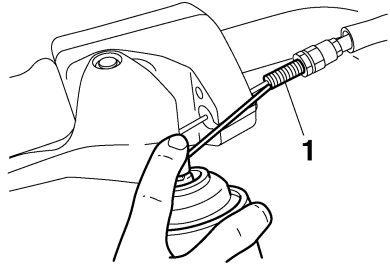
Recommended water-resistant grease:
Yamaha Marine Grease/Yamaha Grease A

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



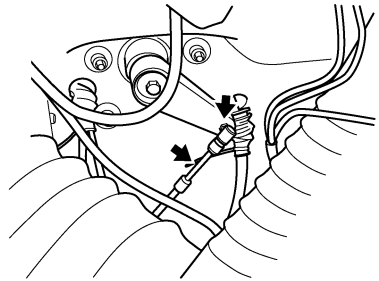
- Throttle cable (handlebar end)
Loosen the adjuster and disconnect the outer cable from the bracket. Spray a rust inhibitor into the outer cable. Connect the outer cable, and then adjust the throttle ca-

ble free play. (See page 85 for adjustment procedures.)

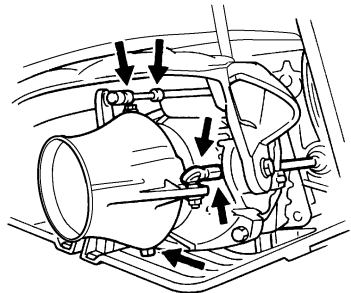


1 Adjuster

- Steering cable (handlebar end)

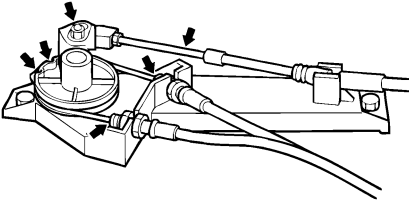


- Steering cable (jet thrust nozzle end)
- Jet thrust nozzle pivot shaft
- QSTS cable (jet thrust nozzle end)

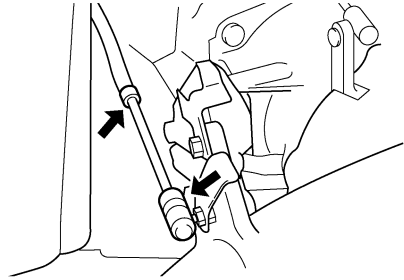


Maintenance and care

- QSTS cables (pulley end)

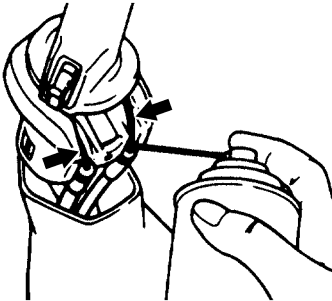


- Shift cable (reverse gate end)



- QSTS cables (handlebar end)

Remove the QSTS cable housing. Spray a rust inhibitor into the outer cables. Reinstall the QSTS cable housing.



- 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)

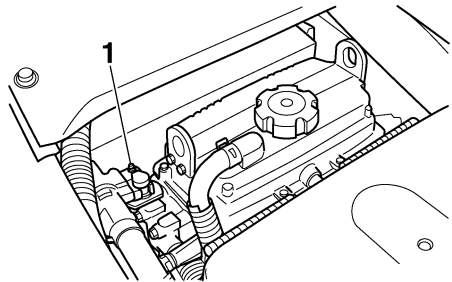
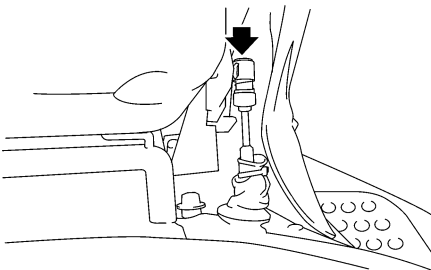
(1.16–1.23 Imp.oz)

Every 100 hours or 12 months:

6.0–8.0 cm³ (0.20–0.27 US oz)

(0.21–0.28 Imp.oz)

- Shift cable (shift lever end)



1 Grease nipple

EJU34450

Checking the battery

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

Maintenance and care

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.

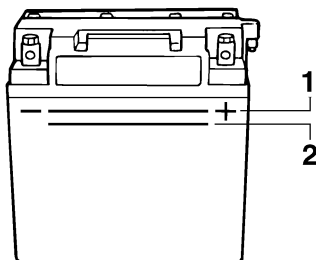
ECJ00230

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 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) Refill the battery with distilled water if necessary.

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.

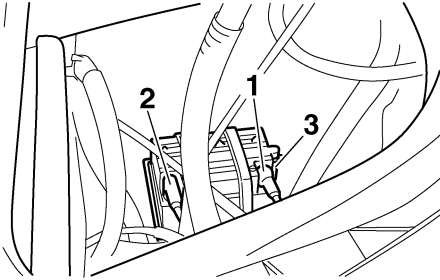
It is recommended to have a Yamaha dealer charge the battery. If you charge the battery yourself, carefully read the battery charger instructions before charging and follow the points below.

- (1) Remove all of the battery caps.
- (2) If the electrolyte level is low, add distilled water to raise it to the specified level.
- (3) Set the charging rate to 1.9 ampere and charge the battery slowly until the explosive gases are discharged vigorously from the battery cells.

Maintenance and care

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 neces-

sary 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 378 kg (833 lb)

FX Cruiser High Output 383 kg (844 lb)

Performance:

Maximum output (according to ISO 8665/SAE

J1228):

104.50 kW@10000 r/min

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 ±50 r/min

Engine:

Engine type:

Liquid cooled 4-stroke, DOHC

Number of cylinders:

4

Engine displacement:

1052 cm³

Bore & stroke:

76.0 × 58.0 mm (2.99 × 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 oil:

SAE 10W-30

Oil grade:

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.

EJU36390

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	33
	Engine shut-off switch	Clip not in place	Install clip	27
	Fuse	Burned out	Replace the fuse and check wiring	96
	Battery	Run down	Recharge	88
		Poor terminal connections	Tighten as required	88
		Terminal corroded	Clean	78
	Starter motor	Faulty	Have serviced by Yamaha dealer	—
Warning system	Overheat mode	Cool down engine	40	
Engine does not start (Starter motor turns over)	Throttle lever	Squeezed	Release	27
	Fuel	Empty	Refill as soon as possible	50
		Stale or contaminated	Have serviced by Yamaha dealer	83
	Fuel tank	Water or dirt present	Have serviced by Yamaha dealer	83
	Spark plug	Fouled or defective	Clean or replace	86
	Spark plug cap	Not connected or loose	Connect properly	86
		Connected to wrong cylinder	Connect properly	86
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	50
		Stale or contaminated	Have serviced by Yamaha dealer	83
	Fuel tank	Water or dirt present	Have serviced by Yamaha dealer	83
	Spark plug	Fouled or defective	Replace	86
		Incorrect heat range	Replace	86
		Gap incorrect	Adjust	86
	Spark plug cap	Loose	Connect properly	86
		Cracked, torn, or damaged	Replace	—
	Electrical wiring	Loose connection	Tighten or connect properly	—
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	50
	Engine overheated	Jet intake clogged	Clean	94
	Exhaust gas temperature	Gas temperature is too high	Cool down engine	41
	Check engine warning	Faulty sensors	Have serviced by Yamaha dealer	41
Watercraft slow or loses power	Cavitation	Jet intake clogged	Clean	94
		Impeller damaged or worn	Have serviced by Yamaha dealer	94
	Engine over-heat warning	Engine speed reduction control activated	Clean jet intake and cool engine	40
	Oil pressure warning	Engine speed reduction control activated	Add oil	40
	Spark plug	Fouled or defective	Replace	86
		Incorrect heat range	Replace	86
		Gap incorrect	Adjust	86
	Spark plug caps	Loose	Connect properly	86
	Electrical wiring	Loose connection	Tighten or connect properly	—
	Fuel	Stale or contaminated	Have serviced by Yamaha dealer	83
	Air filter	Clogged	Clean or replace	84
Oil buildup		Replace	84	

EJU34620

Emergency procedures

EJU34630

Cleaning the jet intake and impeller

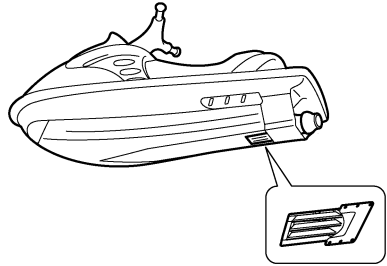
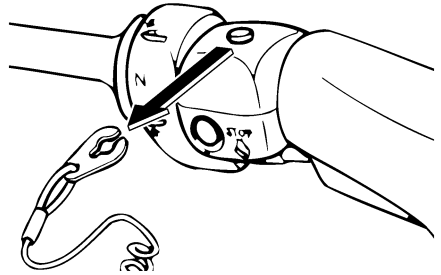
If weeds or debris get caught in the jet intake or impeller, cavitation can occur, causing jet thrust to decrease even though engine speed rises. If this condition is allowed to continue, the engine will overheat and may seize. If there is any sign that the jet intake or impeller is clogged with weeds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

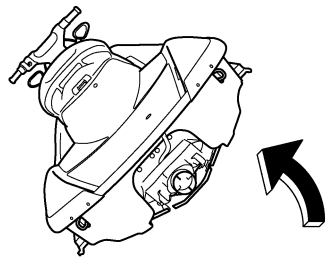


ECJ00650

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.

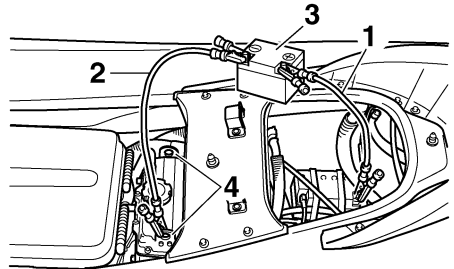
Batteries produce explosive gases. Keep sparks, flames, cigarettes, etc., well away. If using or charging the battery in an enclosed space, make sure that it is well ventilated. Always shield your eyes when working near batteries.

KEEP OUT OF THE REACH OF CHILDREN.

EJU34660

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.

ECJ00690

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

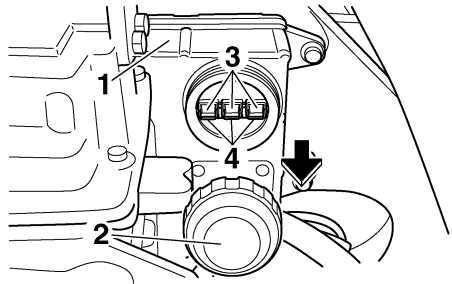
Replacing the fuses

The fuses are located in the electrical box.

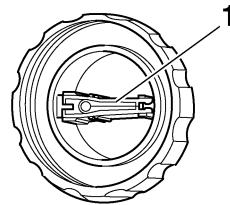
To replace a fuse:

- (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

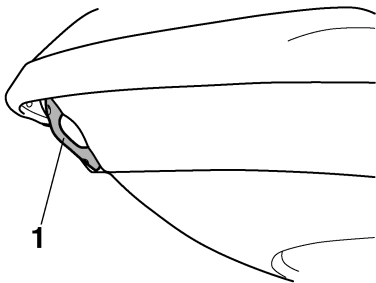
If the watercraft becomes inoperative in the water, it can be towed to shore.

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.**
-

EJU36150

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 54 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 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.

Index

A	
Air filter element, checking	84
Analog speedometer/tachometer	35
Analog speedometer/tachometer and indicator lights	35
B	
Battery	55, 78
Battery, checking	88
Battery, jumping	95
Beaching the watercraft	72
Beverage holder	47
Bilge	54
Boarding alone	67
Boarding and starting from a dock	66
Boarding and starting in deep water	66
Boarding and starting in shallow water	66
Boarding with passengers	67
Bow down	31
Bow eye	32
Bow up	31
Builder's plate	2
C	
Capsized watercraft	69
Check engine warning indicator	41
Cleaning the watercraft	78
Cooling water pilot outlet	60
Cooling water pilot outlets	28
Cruising limitations	11
D	
Digital speedometer	38
Docking the watercraft	72
E	
Emergency procedures	94
Engine break-in	61
Engine compartment	53
Engine oil	50
Engine oil and oil filter	83
Engine oil level	53
Engine overheat warning indicator	40
Engine serial number	1
Engine shut-off cord	59
Engine shut-off switch	27
Engine stop switch	27
Enjoy your watercraft responsibly	19
Exhaust temperature warning indicator	41
F	
Filling the fuel tank	50
Fire extinguisher	56
Flushing the cooling system	76
Front storage compartment	45
Fuel and oil	49
Fuel injection system	90
Fuel level	53
Fuel level meter	38
Fuel level warning indicator	39
Fuel system	77
Fuel system, checking	83
Fuel tank	83
Fuel tank filler cap	26
Fuses, replacing	96
G	
Gasohol	49
Gasoline	49
Getting to know your watercraft	64
Glove compartment	46
H	
Handgrip	32
Hazard information	15
Hood	25
Hour meter/voltmeter	39
Hull and deck	53
Hull Identification Number (HIN)	1
I	
Identification numbers	1
Important labels	3
J	
Jet intake	59
Jet intake and impeller, cleaning	94
Jet thrust nozzle angle, checking	85
Jumper cables, connecting	95
L	
Labels, other	8
Labels, warning	4
Launching the watercraft	61
Learning to operate your watercraft	64
Leaving the watercraft	63
Left multifunction display and operation buttons	37
Limitations on who may operate the watercraft	10

Lubrication.....	77	Shift lever and reverse gate	57
Lubrication points	87	Spark plugs, cleaning and adjusting	86
M		“SPEED” indicator light	36
Main components, location of	20	Start switch.....	27
Maintenance and adjustments	79	Starting the engine	61
Model information.....	2	Starting the watercraft	65
Multifunction information center	34, 60	Steering system	28, 57
O		Stern drain plugs	55
Oil pressure warning indicator.....	40	Stern eyes	33
Operating your watercraft.....	64	Stopping the engine	63
Operation	61	Stopping the watercraft	72
Operation of controls and other functions	24	Storage.....	76
Operation requirements	12	Storage compartments	45
Owner’s/operator’s manual and tool kit....	80	Submerged watercraft.....	97
P		Switches	60
Periodic maintenance chart.....	81	T	
Post-operation care.....	73	Throttle cable, checking and adjusting	85
Pre-operation check list.....	51	Throttle lever	28, 57
Pre-operation check points	53	Tilt lever.....	29
Pre-operation checks	51	Towing the watercraft.....	97
Primary Identification (PRI-ID) number	1	Transporting	75
Pull-up cleats (for FX Cruiser High Output).....	33	Trolling speed, checking	90
Q		Troubleshooting	92
Quick Shift Trim System (QSTS)	58	Troubleshooting chart	92
Quick Shift Trim System (QSTS) selector	30	Turning the watercraft	70
R		U	
Reboarding step.....	32	“UNLOCK” indicator light.....	37
Recommended equipment.....	14	W	
Remote control transmitter.....	26	“WARNING” indicator light	37
Reverse on waterways.....	72	Water separator	54
Riding with passengers.....	65	Watercraft characteristics.....	15
Right multifunction display and operation buttons (for FX Cruiser High Output).....	42	Water-skiing	17
Rough water operation.....	73	Watertight compartment.....	47
“RPM” indicator light.....	36	Y	
S		Yamaha Engine Management System (YEMS)	33
Safe boating rules	19	Yamaha Security System.....	33
Seat storage compartment.....	46	Yamaha Security System lock and unlock modes.....	33
Seats	24		
Shift cable, checking	85		
Shift lever	29		



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