



OWNER'S MANUAL

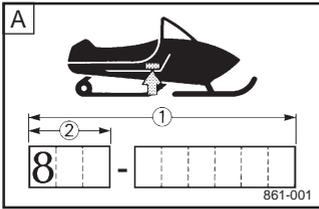
SNOWMOBILE

PZ500D
PZ500MLD
VT500XLD

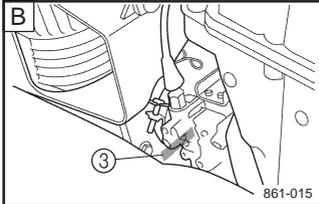
MACHINE IDENTIFICATION

Identification numbers record

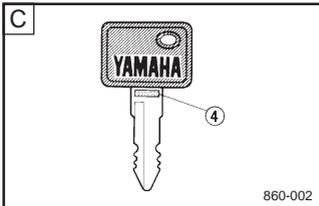
A. FRAME NUMBER:



B. ENGINE NUMBER (PRIMARY I.D.):



C. KEY NUMBER:



Record your frame number, engine number (Primary I.D.) and key number in the spaces provided, to assist you in ordering spare parts from your Yamaha dealer.

- ① The **frame number** is the nine-digit number stamped on the frame of the machine. (See Fig. [A](#))
- ② The **model code number** is the first three digits of the frame number. (See Fig. [A](#))
- ③ The **engine number** is stamped in the location as shown. (See Fig. [B](#))
- ④ **Key number** (See Fig. [C](#))

Also, record and keep these I.D. numbers in a separate place in case your machine is stolen.

INTRODUCTION

Congratulations! Your choice of a Yamaha snowmobile assures you of the highest quality and dependability. Your Yamaha snowmobile is manufactured by a company well-known for excellence in the field of snowmobiles. The most advanced production equipment and technology have made Yamaha one of the best machine manufacturers. We are confident that this snowmobile will meet the greatest expectations of our customers. This manual is designed to acquaint you with the operation of this snowmobile and minor maintenance required for satisfactory service.

Should major repairs ever be required, you are advised to consult a nearby Yamaha dealer who has the techniques, tools and parts to ensure your satisfaction. We hope that the information within this booklet will help you enjoy many hours of pleasure with your Yamaha snowmobile.

**PZ500D
PZ500MLD
VT500XLD
OWNER'S MANUAL
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Corporation, U.S.A.
1st Edition, April 1999
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unauthorized use without
the written permission of
Yamaha Motor Corporation,
U.S.A. is expressly prohibited.
Printed in Japan
P/N LIT-12628-02-08**



⚠ WARNING

PLEASE READ AND UNDERSTAND THIS MANUAL COMPLETELY BEFORE OPERATING THE MACHINE.

NOTE:

- Yamaha continually seeks advancements in product design and quality. Therefore, while this manual contains the most current product information available at the time of printing, there may be minor discrepancies between your machine and this manual. If there is any question concerning this manual, please consult your Yamaha dealer.
- This manual should be considered a permanent part of this machine and should remain with this machine when resold.

Particularly important information is distinguished in this manual by the following notations.



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

⚠ WARNING

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

CAUTION:

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

NOTE:

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

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

Yamaha Motor Corporation, U.S.A. hereby warrants that new Yamaha snowmobiles purchased from an authorized Yamaha snowmobile dealer in the continental United States will be free from defects in material and workmanship for the period of time stated herein, subject to certain stated limitations.

WARRANTY PERIOD:

1. All Yamaha snowmobiles shall be warranted for a term of one (1) year from the date of purchase, plus a special early-season extension (if applicable).
2. All Yamaha snowmobile clutch components are warranted against abnormal wear for one (1) year from the date of purchase, plus a special early-season extension (if applicable).

DURING THE PERIOD OF WARRANTY any authorized Yamaha snowmobile dealer will, free of charge, repair or replace, at Yamaha's option, any part adjudged defective by Yamaha due to faulty workmanship or material from the factory. Parts used in warranty repairs will be warranted for the balance of the snowmobile's warranty period. All parts replaced under warranty become the property of Yamaha Motor Corporation, U.S.A.

GENERAL EXCLUSIONS from this warranty shall include any failures to the machine caused by:

1. Competition, racing, or non-Yamaha authorized rental use.
2. Operation on surfaces other than snow or ice.
3. Installation of parts or accessories that are not qualitatively equivalent to genuine Yamaha parts.
4. Abnormal strain, neglect, or abuse.
5. Lack of proper maintenance.
6. Accident or collision damage.
7. Modification to original parts.

SPECIFIC EXCLUSIONS from this warranty shall include parts replaced due to normal wear or routine maintenance including oil, spark plugs, clutch drive belts, slide runners, and track.

THE CUSTOMER'S RESPONSIBILITY under this warranty shall be to:

1. Operate and maintain the snowmobile as specified in the appropriate Owner's Manual.

2. Give notice to an authorized Yamaha snowmobile dealer of any and all apparent defects within ten (10) days after discovery, and make the machine available at that time for inspection and repairs at such dealer's place of business. You may locate your nearest authorized Yamaha dealer through your local telephone directory.

WARRANTY TRANSFER: To transfer any remaining warranty from the original purchaser to any subsequent purchaser, it is imperative that the machine be inspected and registered for warranty by an authorized Yamaha snowmobile dealer. In order for this warranty to remain in effect, this inspection and registration must take place within ten (10) days after ownership transfer. An inspection and registration fee will be charged for this service.

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

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

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

SPECIAL EARLY-SEASON WARRANTY EXTENSION

A special warranty extension is available for all new Yamaha snowmobiles purchased between June 1 and December 1.

All new Yamaha snowmobiles purchased between June 1 and December 1 will have the warranty extended to November 30 of the following year.

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

WARRANTY QUESTIONS AND ANSWERS

- Q. What costs are my responsibility during the warranty period?
- A. The customer's responsibility includes all costs of normal maintenance services, non-warranty repairs, accident and collision damages, as well as oil, spark plugs, clutch drive belts, and slide runners.
- Q. What are some examples of "abnormal" strain, neglect, or abuse?
- A. These terms are general and overlap each other in areas. Specific examples include: Running the machine out of oil, hitting an object submerged under snow, operation on surfaces other than snow or ice, operating the machine with a broken or damaged part which causes another part to fail, and so on. If you have any specific questions on operation or maintenance, please contact your dealer for advice.
- Q. May I perform any or all of the recommended maintenance shown in the Owner's Manual instead of having the dealer do them?
- A. Yes, if you are a qualified snowmobile mechanic and follow the procedures specified in the Owner's and Service Manual. We do recommend, however, that items requiring special tools or equipment be done by a Yamaha snowmobile dealer.
- Q. Under what conditions is the clutch not covered by warranty?
- A. Clutches as well as clutch components wear with use. Normal wear is not covered under warranty such service is the customer's responsibility. Abnormal wear is, however, covered for one (1) year from the date of purchase. Your Yamaha snowmobile dealer possesses criteria as to what constitutes abnormal wear.

- Q. Will the warranty be void or cancelled if I do not operate or maintain my new Yamaha exactly as specified in the Owner's Manual?
- A. No. The warranty on a new Yamaha cannot be "voided" or "cancelled." However, if a particular failure is caused by operation or maintenance other than as shown in the Owner's Manual, that failure may not be covered under warranty.
- Q. What responsibility does my dealer have under this warranty?
- A. Each Yamaha snowmobile dealer is expected to:
1. Completely set up every new machine before sale.
 2. Explain the operation, maintenance, and warranty requirements to your satisfaction at the time of sale, and upon your request at any later date.
 3. In addition, each Yamaha snowmobile dealer is held responsible for his setup, service and warranty repair work.
- Q. Whom should I contact if I have further questions about this warranty?
- A. Your Yamaha snowmobile dealer has the information and experience necessary to answer almost any questions about this warranty. If the dealer is not able to do so, he is expected to contact Yamaha Motor Corporation, U.S.A., for clarification or assistance.

CUSTOMER SERVICE

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

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

When contacting Yamaha Motor Corporation, U.S.A. be sure to include the model, serial number, names, dates, and receipts.

CHANGE OF ADDRESS

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

If you should move after you have purchased your new snowmobile, please advise us of your new address by sending a postcard listing your snowmobile model name, engine serial number, dealer number (or dealer's name) as it is shown on your warranty registration identification, your name and new mailing address. Mail to:

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

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

YAMAHA EXTENDED SERVICE (Y.E.S.)

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

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

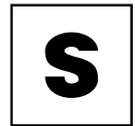
This excellent Y.E.S. plan coverage is only available to Yamaha owners like you, and only while your Yamaha is still within the Yamaha Limited Warranty period. So visit your authorized Yamaha dealer to get all the facts. He can show you how easy it is to protect your investment with Yamaha Extended Service.

We urge you to act now. You'll get the excellent benefits of TRIP coverage right away, and you'll rest easy knowing you'll have strong factory-backed protection even after your Yamaha Limited Warranty expires. You can also save money: Y.E.S. costs less within the first 90 days after you buy your Yamaha. See your dealer today!

A special note:

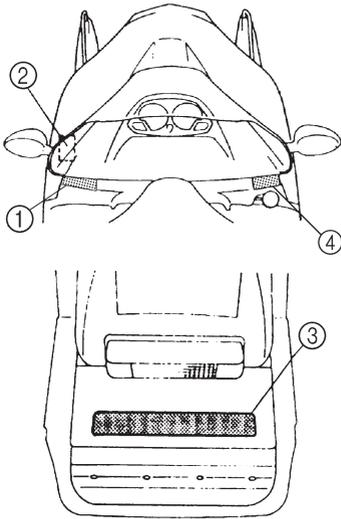
If visiting your dealer isn't convenient, contact Yamaha with your Primary ID number (your engine number). We'll be happy to help you get the Y.E.S. coverage you need.

Yamaha Service Marketing P.O.Box 6555
Cypress, CA 90630
(714) 761-7631



YAMAHA EXTENDED SERVICE

LOCATION OF THE IMPORTANT LABELS



Please read the following labels carefully before operating this machine.

NOTE: _____
 Maintain or replace safety and instruction labels, as necessary.

②

⚠ WARNING
DO NOT OPERATE ENGINE WITHOUT V-BELT OR DRIVE GUARD.
⚠ AVERTISSEMENT
NE PAS FAIRE FONCTIONNER LE MOTEUR SANS COURROIE EN V OU PROTECTEUR D'EMBRAYAGE.
<small>YAMAHA 880-77762-00</small>

① PZ500/PZ500ML

⚠ WARNING	⚠ AVERTISSEMENT
SEVERE INJURY OR DEATH MAY RESULT IF YOU IGNORE ANY OF THE FOLLOWING:	AFIN D'ÉVITER TOUT RISQUE DE BLESSURE SÉRIEUSE OU MÊME MORTELLE, VEUILLEZ SUIVRE LES RECOMMANDATIONS SUIVANTES:
<ul style="list-style-type: none"> • Read the Owner's Manual and all labels before operating this vehicle. • This vehicle is a high performance machine. It should be operated by an experienced operator. • Check throttle, brake, and steering for proper operation before starting engine. • Set parking brake before attempting to start engine. Never run this vehicle with the parking brake applied. • To stop engine in an emergency, push the engine stop switch down. • Do not operate engine without drive belt or drive guard. • Make sure the fuel tank cap is closed securely after refueling. • Do not operate this vehicle on public roads. You could collide with another vehicle. • This vehicle is designed for operator only - no passengers. • Wear an approved helmet, eye protection, and adequate clothing for snowmobiling. 	<ul style="list-style-type: none"> • Avant d'utiliser ce véhicule, lire le manuel du propriétaire et toutes les étiquettes. • Ce véhicule est une machine à haute performance. Elle doit être conduite par un conducteur expérimenté. • Avant de démarrer le moteur, vérifier l'opération du frein, de l'accélérateur et de la direction. • Le frein de sécurité doit être appliqué lors du démarrage. Ne pas rouler avec le frein de sécurité actionné. • En cas d'urgence, utiliser l'interrupteur d'arrêt du moteur. • Ne pas laisser tourner le moteur sans la courroie ou sans son garde. • S'assurer que le bouchon du réservoir soit bien fermé après le remplissage. • Afin d'éviter tout risque de collision, ne pas rouler sur un chemin public. • Ce véhicule est conçu pour un conducteur seul - aucun passager. • Toujours porter un casque approuvé et un habillement de motoneigiste. Prévoir une protection pour les yeux.
<small>8DS-77761-00</small>	

① VT500XL

⚠ WARNING

SEVERE INJURY OR DEATH MAY RESULT IF YOU IGNORE ANY OF THE FOLLOWING:

- Read the Owner's Manual and all labels before operating this vehicle.
- This vehicle is a high performance machine.
- It should be operated by an experienced operator.
- Check throttle, brake, and steering for proper operation before starting engine.
- Set parking brake before attempting to start engine.
Never run this vehicle with the parking brake applied.
- To stop engine in an emergency, push the engine stop switch down.
- Do not operate engine without drive belt or drive guard.
- Make sure the fuel tank cap is closed securely after refueling.
- Do not operate this vehicle on public roads.
You could collide with another vehicle.
- Wear an approved helmet, eye protection, and adequate clothing for snowmobiling.
- Check lever position (Forward or Reverse) before moving.

⚠ AVERTISSEMENT

AFIN D'ÉVITER TOUT RISQUE DE BLESSURE SÉRIEUSE OU MÊME MORTELLE, VEUILLEZ SUIVRE LES RECOMMANDATIONS SUIVANTES:

- Avant d'utiliser ce véhicule, lire le manuel du propriétaire et toutes les étiquettes.
- Ce véhicule est une machine à haute performance.
Elle doit être conduite par un conducteur expérimenté.
- Avant de démarrer le moteur, vérifier l'opération du frein, de l'accélérateur et de la direction.
- Le frein de sécurité doit être appliqué lors du démarrage.
Ne pas rouler avec le frein de sécurité actionné.
- En cas d'urgence, utiliser l'interrupteur d'arrêt du moteur.
- Ne pas laisser tourner le moteur sans la courroie ou sans son garde.
- S'assurer que le bouchon du réservoir soit bien refermé après le remplissage.
- Afin d'éviter tout risque de collision, ne pas rouler sur un chemin public.
- Toujours porter un casque approuvé et un habillement de motoneigiste.
Prévoir une protection pour les yeux.
- Vérifier la position du levier (marche avant ou arrière) avant d'être en marche.

8DM-77761-00

③ PZ500ML/VT500XL

⚠ WARNING

NO PASSENGER OR CARGO ON THIS TRACK COVER.
If was not designed to carry weight. It could bend or break under load.
Anything placed here could block the view of the break/tail light which could cause an accident.

⚠ AVERTISSEMENT

AUCUN PASSAGER OU MARCHANDISE SUR LE PROTECTEUR DE CHENILLE.
Ce protecteur n'a pas été conçu pour supporter un poids. Il pourrait s'incurver ou se briser sous la charge.
Tout objet ou personne placé à cet endroit pourrait bloquer la vue des feux d'arrêt/amère et ainsi causer un accident.

8CY-77762-00

④ PZ500ML

⚠ WARNING

Improper use of STRAP on the handlebar can result in SEVERE INJURY or DEATH.

- Use strap only as an operator grip point to shift weight uphill to maintain balance during traverse (sidehill) riding.
- Keep one hand on handlebar. Do not change speed or direction abruptly.
- Only experienced operators should traverse slopes steep enough to require strap use.

⚠ AVERTISSEMENT

L'utilisation incorrecte de la POIGNÉE SOUPLE du guidon peut causer des BLESSURES GRAVES voire MORTELLES.

- S'agripper à la poignée seulement lors de la traversée latérale de pentes pour garder l'équilibre lorsque l'on déplace son poids du côté amont.
- Garder une main sur le guidon. Éviter toute accélération ou freinage brusques.
- La traversée de pentes dont la raideur requiert l'utilisation de la poignée est réservée aux pilotes expérimentés.

8ED-77761-00

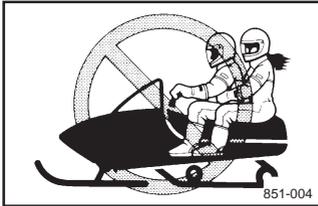
SAFETY INFORMATION

When you ride your snowmobile, you must know and use the following for your safety. Severe injury or death may result if you ignore any of the following.



Before Operating

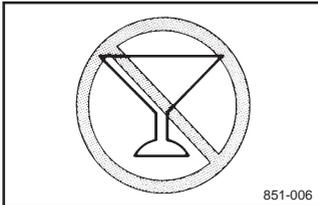
1. Read the Owner's Manual and all labels before operating this machine. Become familiar with all of the operating controls and their function. Consult a Yamaha dealer about any control or function you do not understand.



2. This machine was not manufactured for use on public streets, roads, or highways. Such use is prohibited by law, and you could collide with another vehicle.

3. PZ500 and PZ500ML are designed to carry the OPERATOR ONLY.

Passengers are prohibited. Carrying a passenger can cause loss of control.

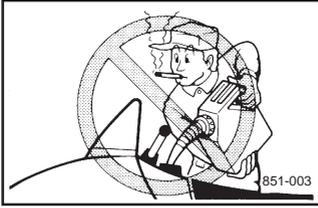


4. Do not operate the machine after drinking alcohol or taking drugs. Your ability to operate the machine is reduced by the influence of alcohol or drugs.

5. For safety and proper care of the machine, always perform the pre-operation checks on pages 6-1 ~ 6-8 before starting the engine. Check the throttle, steering and brake operation every time before starting the engine. Be sure the throttle lever moves freely and it returns to the idle position when it is released.

6. Apply the parking brake before starting the engine. Never drive the machine with the parking brake applied. This may overheat the brake disc and reduce braking ability.

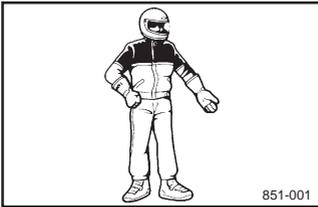
7. Do not allow anyone to stand behind the machine when starting, inspecting or adjusting the machine. A broken track, track fittings or debris thrown by the track could be dangerous to the operator or bystanders.



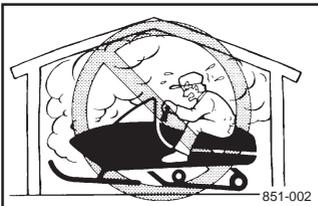
8. Handle fuel with care; it is highly flammable.

- Never add fuel when the engine is running or hot. Allow the engine to cool for several minutes after running.
- Use an approved fuel container.
- Fill the fuel tank outdoors with extreme care. Never remove the fuel cap indoors. Never fill the fuel tank indoors.
- Never refuel while smoking or in the vicinity of an open flame.
- Make sure the fuel tank cap is closed securely after refueling. Wipe up any spilled fuel immediately.

9. If you swallow some gasoline, inhale a lot of gasoline vapor, or get some gasoline into your eye(s), see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash your skin with soap and water, and change your clothes.



10. Wear protective clothing. Wear an approved helmet, and a face shield or goggles. Also, wear a good quality snowmobile suit, boots, and a pair of snowmobile gloves or mittens that will permit use of your thumbs and fingers for operation of the controls.



Operation

1. Do not run the engine indoors, except when starting the engine to transport the machine in or out of the building. Open the outside doors; exhaust fumes are dangerous.
2. Be careful where you ride. There may be obstacles hidden beneath the snow. Stay on established trails to minimize your exposure to hazards. Ride slowly and cautiously when you ride off of established trails. Hitting a rock or stump, or running into wires could cause an accident and injury.

3. This machine is not designed for use on surfaces other than snow or ice. Use on dirt, sand, grass, rocks, or bare pavement may cause loss of control and may damage the machine.
4. Avoid operating on glare ice, or on snow which has a lot of dirt or sand mixed in. Operation under such conditions will damage or result in rapid wear of ski runners, drive track, slide runners and drive sprockets.
5. Always have other snowmobilers with you when going on a ride. You may need help if you run out of fuel, have an accident, or damage your snowmobile.
6. Many surfaces such as ice and hard-packed snow require much longer stopping distances. Be alert, plan ahead and begin decelerating early. The best braking method on most surfaces is to release the throttle and apply the brake gently – not suddenly.

Maintenance and Storage

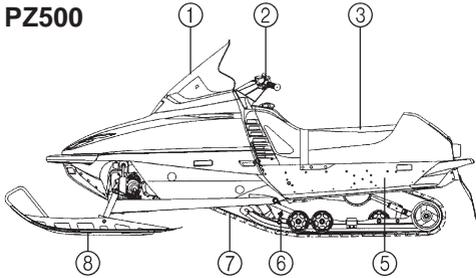
1. Do not leave the machine on its left side for an extended period of time. Fuel may leak out from the fuel breather hose.
2. Modifications made to the machine not approved by Yamaha, or the removal of original equipment may render your machine unsafe for use and may cause severe personal injury. Modifications may also make your machine illegal to use.
3. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present such as hot water and space heaters, open flame, spark, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
4. Always refer to “STORAGE” for important details if the machine is to be stored for an extended period.
5. Maintain or replace safety and instruction labels, as necessary.

-MEMO-

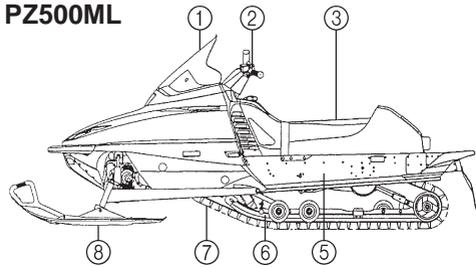
DESCRIPTION

- ① Windshield
- ② Steering handlebar
- ③ Seat
- ④ Passenger grip warmer switch (VT500XL)
- ⑤ Frame
- ⑥ Slide rail suspension
- ⑦ Drive track
- ⑧ Steering ski

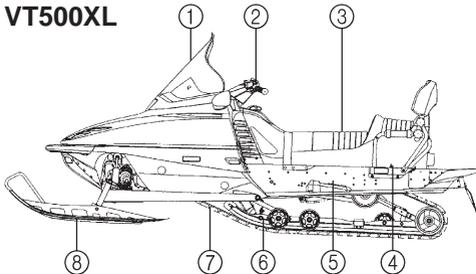
PZ500

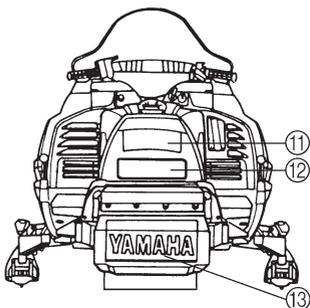
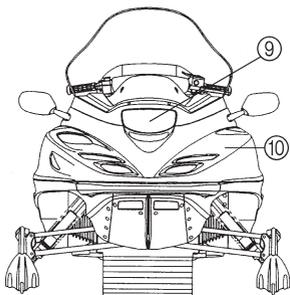


PZ500ML



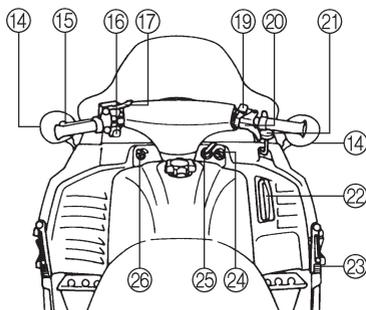
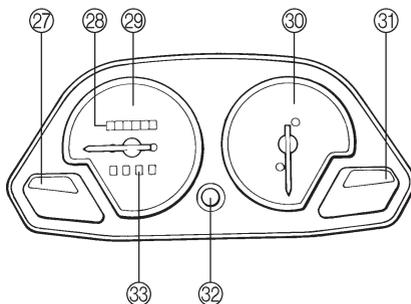
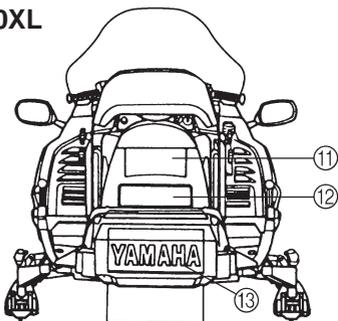
VT500XL



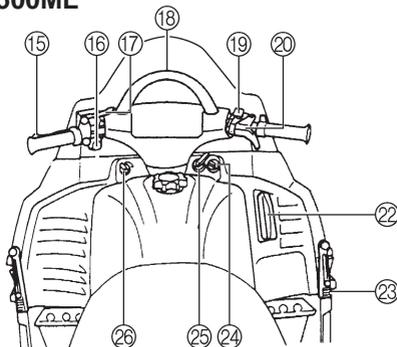


- ⑨ Headlight
- ⑩ Shroud
- ⑪ Luggage box
- ⑫ Taillight
- ⑬ Flap
- ⑭ Side mirror (VT500XL)
- ⑮ Brake lever
- ⑯ Headlight beam switch
- ⑰ Parking brake lever
- ⑱ Strap (PZ500ML)
- ⑲ Engine stop switch
- ⑳ Throttle lever
- ㉑ Drive select lever (VT500XL)
- ㉒ Starter handle
- ㉓ Shroud latch
- ㉔ Main switch
- ㉕ Starter lever
- ㉖ Grip warmer control knob
- ㉗ "HIGH BEAM" indicator light
- ㉘ Odometer
- ㉙ Speedometer
- ㉚ Tachometer
- ㉛ "OIL LEVEL" warning indicator light
- ㉜ Trip odometer reset knob
- ㉝ Trip odometer

VT500XL



PZ500ML



CONTROL FUNCTIONS

ESS08802

MAIN SWITCH

The main switch controls the following items.

① OFF:

The ignition circuit is switched off.

The key can be removed only in this position.

② ON:

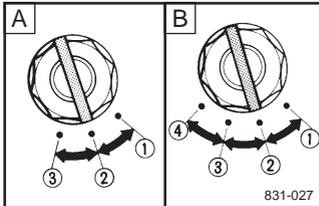
The ignition circuit is switched on.

The engine can be started.

③ WARMER:

The grip and thumb warmer circuit is switched on.

Also, the ignition circuit is switched on and the engine can be started.



NOTE:

The handlebar grips and throttle lever will heat electrically after the engine starts.

④ START (VT500XL):

The starting circuit is switched on.

The starter motor starts.

NOTE:

The lights will come on after the engine starts.

CAUTION:

Release the switch immediately after the engine starts.

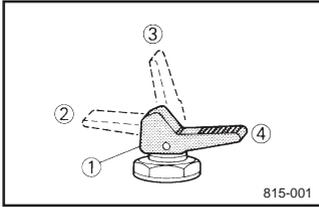
A PZ500/PZ500ML

B VT500XL

ESS22200

STARTER LEVER (CHOKE)

Use this lever when starting and warming up a cold engine.



- ① Starter lever (choke)
- ② When starting a cold engine.
- ③ Warming up
- ④ When the engine is warm.

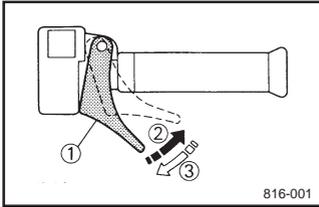
NOTE:

Refer to STARTING THE ENGINE for proper operation.

ESS21600

THROTTLE LEVER

Once the engine is running cleanly, squeezing ② the throttle lever ① will increase the engine speed and cause engagement of the drive system. Regulate the speed of the machine by varying the throttle position. Because the throttle is spring-loaded, the machine will decelerate, and the engine will return to an idle when the thumb is released ③.



⚠ WARNING

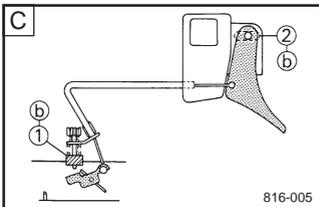
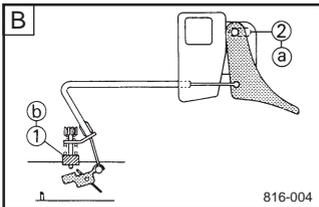
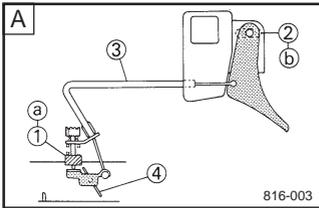
Check the throttle, brake, and steering for proper operation before starting engine.

THROTTLE OVERRIDE SYSTEM (T.O.R.S.)

If the carburetor or throttle cable should malfunction during operation, release the throttle lever. The T.O.R.S. is designed to interrupt the ignition and stop the engine if the carburetor fails to return to idle when the lever is released.

⚠ WARNING

If T.O.R.S. stops the engine, make sure that the cause of the malfunction has been corrected and that the engine can be operated without a problem before restarting the engine.



MODE \ SWITCH	A	B	C
	Idle or starting	Run	Trouble
Throttle switch	OFF	ON	OFF
Carburetor switch	ON	OFF	OFF
Engine	RUN	RUN	STOP

A Idle or starting

B Run

C Trouble

① Carburetor switch

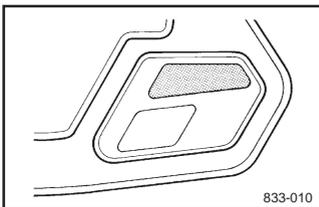
② Throttle switch

③ Throttle cable

④ Throttle valve

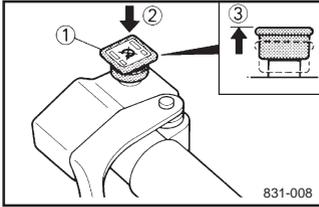
a "ON"

b "OFF"



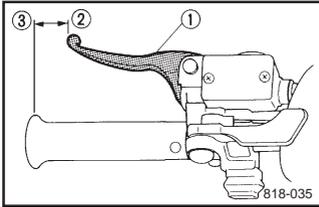
OIL LEVEL WARNING LIGHT

If the oil level falls below the lower level, this light comes on. If the light comes on, add engine oil to the oil tank at the first opportunity.



ENGINE STOP SWITCH

The engine stop switch ① is used to stall the engine in an emergency. Simply push ② the engine stop switch, and the engine will stop. To start the engine, pull ③ the engine stop switch and see page 7-1 for more details. During the first few rides, you should practice using the switch while driving so that you can react quickly in an emergency.



BRAKE LEVER

The machine is stopped by braking the entire drive system. Squeeze the brake lever towards the handlebar to stop the machine.

- ① Brake lever
- ② Brake lever end
- ③ Handlebar end

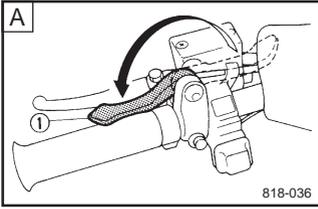
NOTE: _____

When the brake is operated, the brake light will illuminate.

CAUTION: _____

Be sure the brake lever end does not project out over the handlebar end. This will help prevent brake lever damage when the machine is placed on its side for service.

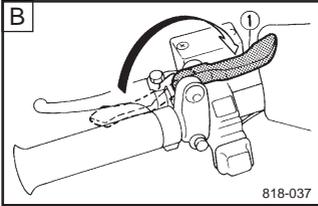
ESS27100



PARKING BRAKE LEVER

When parking the machine or starting the engine, apply the parking brake by moving the parking brake lever ① to the left.

To release the parking brake, move the parking brake lever ① to the right.



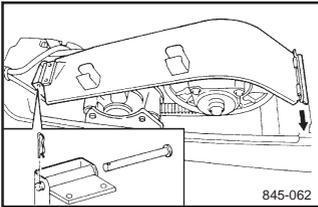
A To apply the parking brake

B To release the parking brake

⚠ WARNING

- Always set the parking brake before attempting to start the engine.
- Never run the machine with the parking brake applied.
This may overheat the brake disc and reduce braking ability.

ESS28700



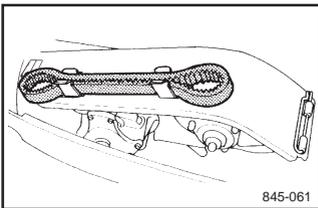
V-BELT GUARD

The V-belt guard is designed to cover the clutch and V-belt in case parts break or come loose.

⚠ WARNING

- Be sure the V-belt guard is tightened securely before operating the machine.
- Never run the engine without the V-belt or with the V-belt guard removed.

ESS08100



V-BELT HOLDER

Keep a spare V-belt for emergency use by putting it into the holder provided.

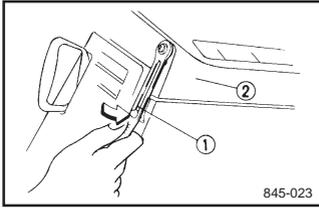
CAUTION:

Be sure the V-belt is installed securely in the holder.

ESS29100

SHROUD LATCH

To open the shroud, unhook the latch, then slowly raise the shroud forward until it stops. When closing the shroud, slowly lower it to its home position, then hook the shroud latches.



- ① Latch
- ② Shroud

CAUTION:

Be sure all cables and wires are in place when closing the shroud.

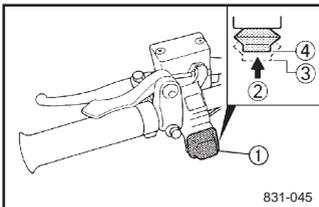
⚠ WARNING

- Do not drive the machine with the shroud open or unlatched or with the shroud removed.
- Keep your body and clothing away from rotating parts when servicing with the shroud open.
- Do not touch the hot muffler and engine during or immediately after operation.

ESS28300

HEADLIGHT BEAM SWITCH

Push the switch to change the head light beam alternately to high or low.

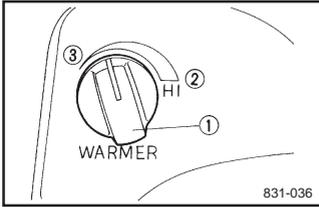


- ① Headlight beam switch
- ② Push
- ③ High beam
- ④ Low beam

ESS09000

GRIP WARMER CONTROL KNOB

This knob controls the electrically heated handlebar grips and throttle lever when the main switch is in the "WARMER" position.



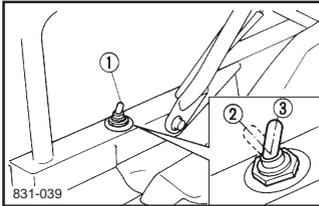
- ① Grip warmer control knob

Knob position	Warmer temperature
② Turn clockwise	Higher
③ Turn counterclockwise	Lower

ESS08900

PASSENGER GRIP WARMER SWITCH (VT500XL)

This switch controls the electrically heated passenger grips.

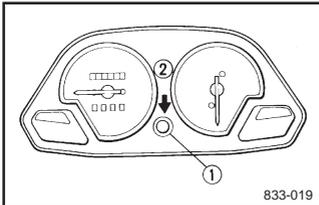


- ① Passenger grip warmer switch
- ② ON
- ③ OFF

ESS29900

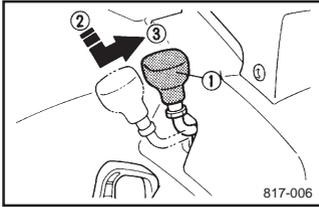
TRIP ODOMETER RESET KNOB

Use the knob to reset the trip odometer.



- ① Reset knob
- ② Push

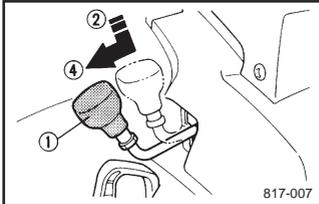
ESS23701



DRIVE SELECT LEVER (SHIFT LEVER) (VT500XL)

The drive select lever is used to shift your machine into forward or reverse. After coming to a complete stop, move the lever to the desired direction.

- ① Drive select lever (shift lever)
- ② Push down
- ③ Move to forward
- ④ Move to reverse

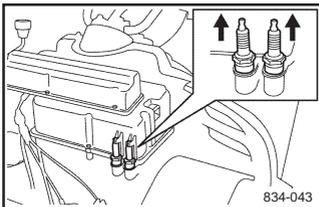


	Machine movement
FWD	Forward
REV	Reverse

CAUTION:

Do not shift from “Forward” to “Reverse” or “Reverse” to “Forward” while the machine is moving. Otherwise the drive system could be damaged.

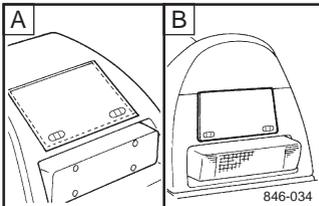
ESS28401



SPARK PLUG HOLDER

Keep spare spark plugs for emergency use by placing them into the holder provided.

ESS24200



LUGGAGE BOX

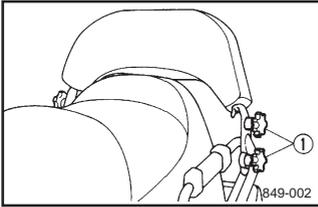
Open the box to store the service tools, spare parts, or other small items.

- A) PZ500/PZ500ML
- B) VT500XL

BACKREST (VT500XL)

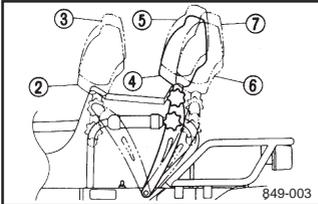
This backrest is adjustable.

Remove the mount bolts ① and adjust the backrest position.



⚠ WARNING

Make sure that the mount bolts are tightened securely after adjusting.



Backrest position:

- ② Front position 1
- ③ Front position 2
- ④ Rear position 1
- ⑤ Rear position 2
- ⑥ Rear position 3
- ⑦ Rear position 4

PRE-OPERATION CHECKS

NOTE: _____

Pre-operation checks should be made each time the machine is used.

⚠ WARNING _____

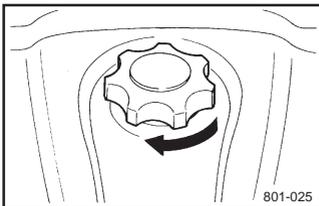
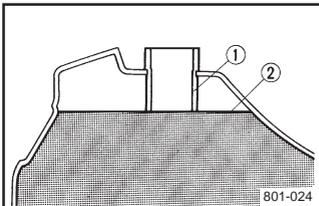
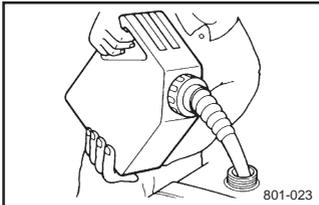
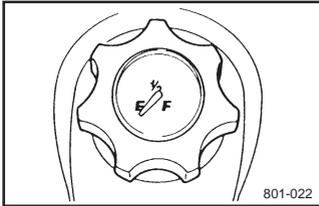
The engine and muffler will be very hot after the engine has been run.

Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.

ESS30303

FUEL

Make sure that there is sufficient fuel in the tank.



Recommended fuel:

Unleaded gasoline

Pump octane $\frac{R+M}{2}$; 88 or higher

Fuel tank capacity:

Total: 44.3 L (9.7 Imp gal, 11.7 US gal)

⚠ WARNING _____

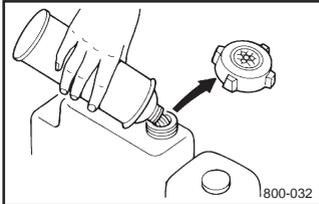
- Fuel is highly flammable and poisonous. Check “SAFETY INFORMATION” (see page 3-2) carefully before refueling.
- Do not fill the fuel tank above the bottom of the filler tube ①. The fuel could overflow if the machine is tilted or if the ambient temperature rises, causing the fuel to warm up and expand.
- Make sure that the fuel tank cap is closed securely after refueling. Leaking fuel can catch fire.

② Fuel level

CAUTION: _____

- Oxygenated fuels (“gasohol”) containing max. 5% of ethanol can be used, although richer jetting may be required to prevent engine damage. Consult a Yamaha dealer. Gasohol containing methanol is not recommended.

- Be sure that snow and/or ice does not enter into the fuel tank when refueling.
- Do not use alcohol deicers or water absorbing additives with oxygenated fuel.
- The tank should be filled with straight gasoline as specified.

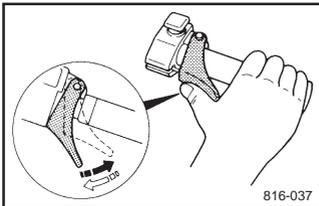


ESS33100

ENGINE OIL

Make sure that there is sufficient oil in the oil tank.

Oil tank capacity: 3.3 L (2.9 Imp qt, 3.5 US qt)
Recommended oil: YAMALUBE 2-cycle oil

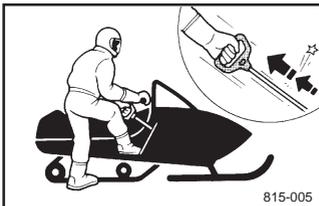


ESS31500

THROTTLE LEVER

Check the throttle lever operation before starting the engine.

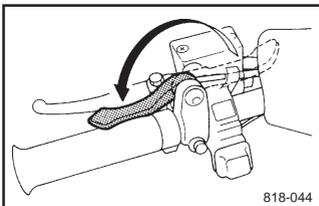
It must open smoothly and spring back to idle when released.



ESS31200

MANUAL STARTER

Check for proper operation. Check the rope for damage.



ESS31301

THROTTLE OVERRIDE SYSTEM (T.O.R.S.) CHECK

⚠ WARNING

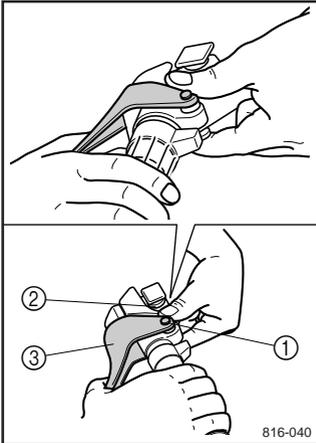
When checking T.O.R.S.:

- Be sure the parking brake is applied.
- Be sure the throttle lever moves smoothly.
- Do not run the engine up to clutch engagement r/min. Otherwise, the machine could start moving forward unexpectedly, which could cause an accident.

1. Start the engine.

NOTE:

Refer to STARTING THE ENGINE.



816-040

2. Hold the pivot point of the throttle lever away from the throttle switch by putting your thumb (above) and fore-finger (below) between the throttle lever pivot ① and stop switch housing ②.

While holding as described above, press the throttle lever ③ gradually.

The engine should stop immediately.

⚠ WARNING

If the engine does not stop, stop the engine by turning the main switch to the “OFF” position and consult a Yamaha dealer.

ESS37000

BRAKE

(See page 8-14 ~ 8-15 for more details.)

1. Brake lever

Test the brake at slow speed when starting out to make sure it is working properly. If the brake does not provide proper braking performance, inspect the brake for wear or brake fluid leakage.

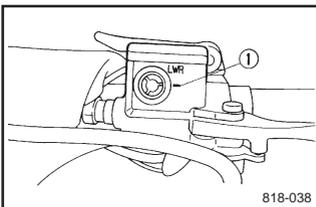
⚠ WARNING

A soft, spongy feeling in the brake lever indicates a failure in the brake system.

Do not operate the machine if you find any problems in the brake system. Consult a Yamaha dealer for immediate repairs. You could lose braking ability, which could lead to an accident.

CAUTION:

Make sure that the brake lever end does not project out over the handlebar end. This is to prevent brake lever damage when the machine is placed on its side.



818-038

2. Brake fluid

Check the brake fluid level.

Add fluid if necessary.

- ① Lower level
(See page 8-14.)

Recommended brake fluid: DOT 4

BRAKE FLUID LEAKAGE

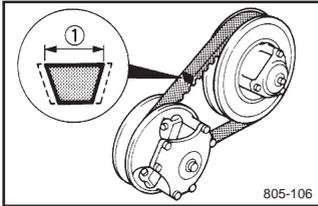
Apply the brake for a few minutes. Check to see if any brake fluid leaks out from the pipe joints or the master cylinder.

⚠ WARNING

If brake fluid leakage is found, consult a Yamaha dealer for immediate repairs.

CAUTION:

Brake fluid may deteriorate painted surfaces or plastic parts. Never spill any fluid. If any is spilled, clean it up immediately.

**V-BELT**

Open the shroud and remove the V-belt guard. Check the V-belt for wear and damage. Replace if necessary.

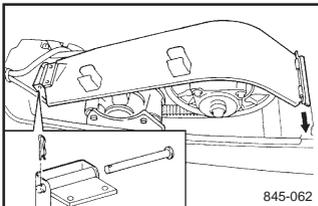
Wear limit ①: 33 mm (1.30 in)

⚠ WARNING

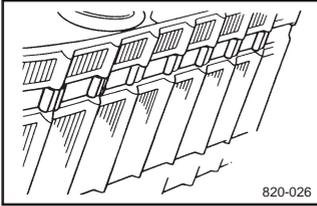
- Be sure the V-belt guard is tightened securely before operating the machine.
- Never run the engine without the V-belt or with the V-belt guard removed.

DRIVE V-BELT GUARD

Check the drive belt guard mounts for damage. Make sure that the drive belt guard is firmly in place.



ESS34000



DRIVE TRACK

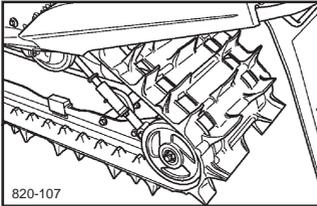
(See page 8-19 ~ 8-21 for more details.)

Check the drive track for deflection, wear and damage.

Adjust/replace if necessary.

⚠ WARNING

Do not operate the machine if you find damage to the drive track, or misadjustment. Drive track damage and/or failure could result in loss of braking ability and machine control, which could cause an accident.



ESU00235*

38-mm (1.5-in) HIGH-PROFILE PATTERN DRIVE TRACK (PZ500ML)

PZ500ML is originally equipped with a 38-mm (1.5-in) high-profile pattern drive track specifically for use in deep snow riding conditions.

Therefore, avoid prolonged operation on hard surfaces such as ice, hard-packed snow, dirt, etc., to extend the life of the track and slide runners.

CAUTION:

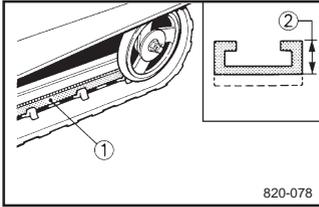
- Only use in deep snow riding conditions.
- Operation on areas with light snowfall, ice, hard-packed snow, dirt, or grass will result in rapid wear or damage to the track and slide runners from lack of snow which serves as a lubricant.

ESS32200

SLIDE RUNNERS

Check wear and damage.

If the slide runners reach the wear limit, they should be replaced.



- ① Slide runners
- ② Wear limit

Wear limit height: 10 mm (0.4 in)

CAUTION:

Ride on fresh snow frequently. Operating on ice or hard packed snow will rapidly wear the slide runners.

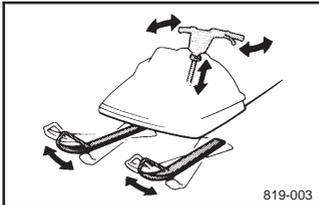
ESS34800

STEERING SYSTEM

1. Check the following for excessive free play:

- 1) Push the handlebar up and down and back and forth.
- 2) Turn the handlebar slightly to the right and left.

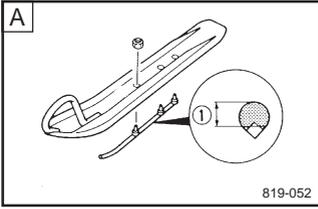
2. If excessive free play is noticed, consult a Yamaha dealer.



ESS32301

SKI/SKI RUNNER

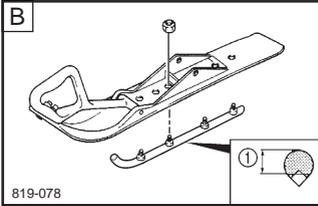
Check wear and damage.
Replace if necessary.



Ski runner wear limit ①: 8 mm (0.31 in)

Ⓐ PZ500/VT500XL

Ⓑ PZ500ML

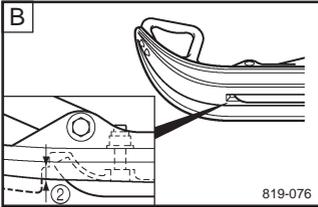


Plastic ski wear limit ②: 8 mm (0.31 in)

CAUTION:

Avoid scratching the plastic skis when loading and unloading the snowmobile, when riding in areas with little or no snow and on sharp edges such as concrete, curbs, etc.

This will wear or damage the plastic skis.



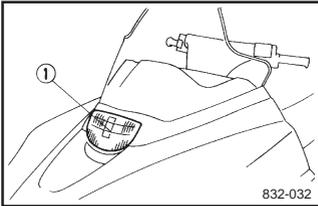
ESS36500

LIGHTS

Check the lights.
Replace any burned out bulbs.

CAUTION:

Avoid using the scraper or hot water for cleaning to protect the plastics lens ①.

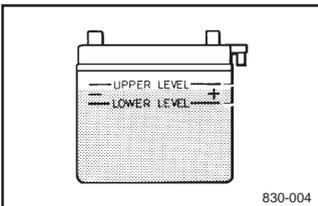


ESS36000

BATTERY (VT500XL)

(See page 8-25 for more details.)

Check the fluid level and fill if necessary.
Use only distilled water if refilling is necessary.



FITTINGS/FASTENERS

Check the tightness of the fittings/fasteners.

Tighten in proper sequence and torque if necessary.

SERVICE TOOLS AND SPARE PARTS

It is a good practice to carry service tools and spare parts with your machine so that minor repairs can be done by yourself. The following should be carried in the luggage box.

- Tool kit
- Flashlight
- Roll of plastic tape
- Steel wire
- Tow rope
- Emergency starter rope

In addition to these, it is advisable to have the following spare parts:

- Drive belt
- Light bulbs
- Spark plugs

When you start out for a long distance trip, extra fuel and oil should be carried.

OPERATION

ESS40201

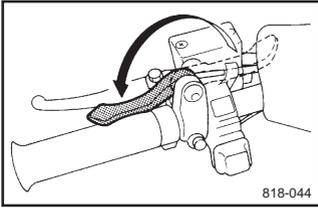
STARTING THE ENGINE

⚠ WARNING

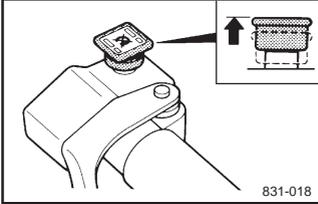
- Be sure to check "SAFETY INFORMATION" carefully before starting the engine.
- Be sure the parking brake is applied.

NOTE:

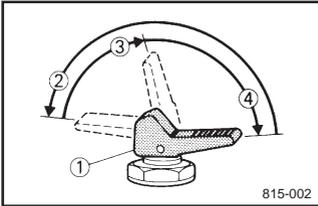
Be sure the engine stop switch is in the "ON" position.



818-044



831-018



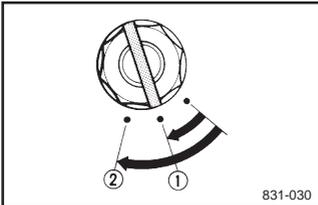
815-002

1. Fully open the starter lever (choke).

- ① Starter lever (choke)
- ② Fully open (cold engine starting)
- ③ Half-open (warm engine up)
- ④ Close (warm engine starting)

NOTE:

The starter lever (choke) is not required when the engine is warm. Put the starter lever in the "Close" position.

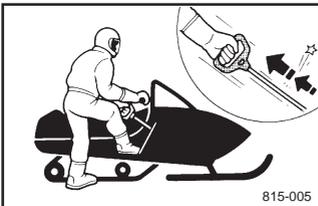


831-030

Manual Starting Model (PZ500/PZ500ML)

2. Turn the main switch to the "ON" or "WARMER" position.

- ① "ON"
- ② "WARMER"



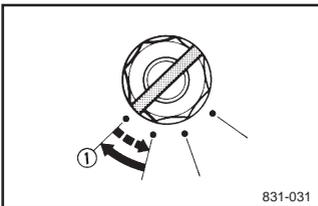
815-005

3. Pull slowly on the recoil starter until it is engaged, then pull it briskly. After the engine starts, put the starter lever (choke) in the "Half-open" position. Warm up the engine until it does not run roughly or begin to stall when the starter lever is returned to the "Close" position.

Electric Starting Model (VT500XL)

2. Turn the main switch to the "START" position.

After the engine starts, put the starter lever (choke) in the "Half-open" position. Warm up the engine until it does not run roughly or begin to stall when the starter lever is returned to the "Close" position.



831-031

- ① "START"

CAUTION:

- Release the switch immediately after the engine starts.
- If the engine fails to start, release the switch, wait a few seconds, then try again. Each attempt should be as short as possible to preserve the battery. Do not crank the engine more than 10 seconds on any one attempt.

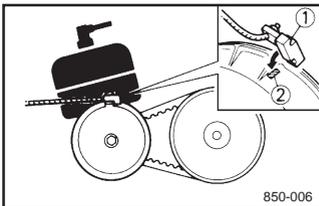
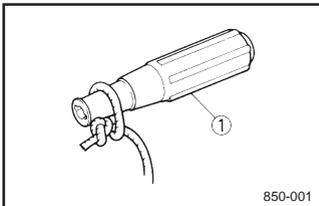
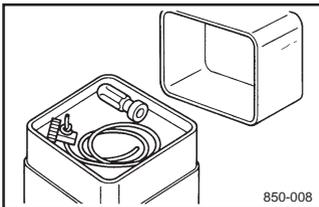
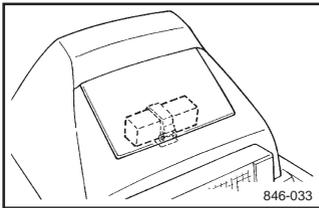
ESS41602

EMERGENCY ENGINE STARTING Manual Starting Model (PZ500/PZ500ML)

If the recoil starter system should fail, take the emergency starter rope out of the tool kit box and proceed as follows.

NOTE:

The emergency starter rope is supplied in the tool kit box at the factory.



1. Proceed with item 1. for the "STARTING THE ENGINE" and item 2. for the "Manual Starting Model".

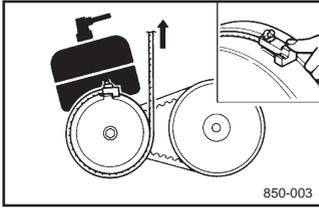
2. Tighten the emergency starter rope on the screwdriver handle.

① Screwdriver handle

3. Mesh the rope stopper with the primary sheave edge.

① Rope stopper

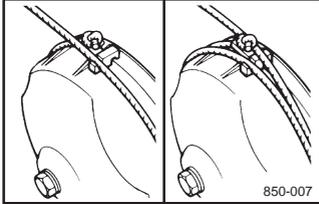
② Primary sheave edge



4. Wind the rope 3-counterclockwise turns on the primary sheave.
5. Grasp the screwdriver handle and pull briskly.

⚠ WARNING

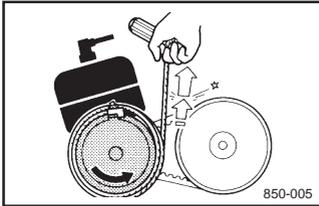
Do not wind the emergency starter rope around your hand.



6. After the engine starts, put the starter lever (choke) in the "Half-open" position. Warm up the engine until it does not run roughly or begin to stall when the starter lever is returned to the "Close" position.
7. Install the drive guard and shroud.

⚠ WARNING

Avoid contact with the moving primary sheave.



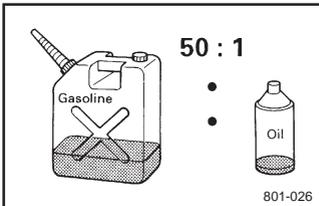
Electric Starting Model (VT500XL)

Follow the "STARTING THE ENGINE" procedures for the "Manual Starting Model".

ESS41501

BREAK-IN

There is never a more important period in the life of your machine than the Break-In period. For the first 10 hours, approximately 200 km (125 mi), do not put an excessive load on the engine. Avoid prolonged full throttle operation. Also avoid lugging the engine, such as laborious operation in wet snow. If any abnormal condition is noticed, such as excessive vibration or noise, consult a Yamaha dealer.



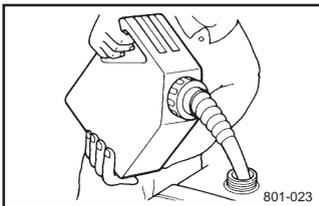
NOTE:

To ensure proper engine break-in, use a 50 : 1 fuel/oil mixture when filling the fuel tank of a new machine for the first time.

For EX:

0.2L of oil per 10L of gas (or 2.6 ounces of oil per one gallon of gas) equals a 50 : 1 mixing ratio.

See page 6-1 ~ 6-2 for the recommended fuel and oil.



RIDING YOUR SNOWMOBILE

GETTING TO KNOW YOUR SNOWMOBILE

A snowmobile is a rider active vehicle, and your riding position and your balance are the two basic factors of maneuvering your snowmobile.

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

Riding your new snowmobile can be a very enjoyable activity, providing you with hours of pleasure. But it is essential to familiarize yourself with the operation of the snowmobile to achieve the skill necessary to enjoy riding safely. Before you begin to ride, be sure you have read this Owner's Manual completely and understand the operation of the controls.

Pay particular attention to the safety information on page 3-1 ~ 3-3.

Please read all warning and caution labels on your snowmobile. Also read the Snowmobiler's Safety Handbook originally supplied with your machine.

LEARNING TO RIDE YOUR SNOWMOBILE

Before you ride, always perform the pre-operation checks listed on page 8-1 ~ 8-3. The short time spent checking the condition of the machine will be rewarded with added safety and a more reliable snowmobile. Always wear the proper clothing for both warmth and to help protect you from injury if an accident occurs.

Become familiar with this snowmobile at slow speeds, even if you are an experienced operator. Do not attempt to operate at maximum performance until you are totally familiar with the machine's handling and performance characteristics.

Set the parking brake and follow the instructions on page 7-1 ~ 7-2 to start the engine. Once it has warmed up, you are ready to begin riding your snowmobile.

TO START OUT AND ACCELERATE

1. With the engine idling, release the parking brake.
2. Apply the throttle slowly and smoothly. The centrifugal clutch will engage and you will start to accelerate.

⚠ WARNING

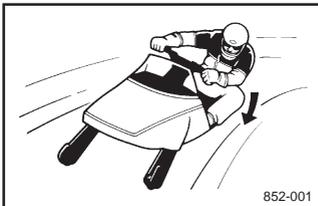
The operator should always keep both hands on the handlebars. Never put your feet outside the running boards. Avoid high speeds until you have become thoroughly familiar with your snowmobile and all of its controls.

BRAKING

When slowing down or stopping, release the throttle and apply the brake gently-not suddenly.

⚠ WARNING

Many surfaces such as ice and hard packed snow require much longer stopping distances. Be alert, plan ahead and begin decelerating early. Improper use of the brake can cause the drive track to lose traction, reducing control and increasing the possibility of an accident.



TURNING

For most snow surfaces, “body English” is the key to turning.

As you approach a curve, slow down and begin to turn the handlebars in the desired direction. As you do so, put your weight on the running board to the inside of the turn and lean your upper body into the turn.

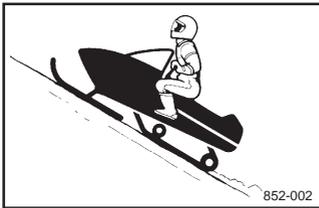
This procedure should be practiced at slow speed many times in a large flat area with no obstacles. Once you have learned this technique, you should be able to perform it at higher speeds or in tighter curves. Lean more as the turn gets sharper or is made at higher speeds.

Improper riding procedures such as abrupt throttle changes, excessive braking, incorrect body movements, or too much speed for the sharpness of the turn may cause the snowmobile to tip.

If your snowmobile begins to tip while turning, lean more into the turn to regain balance. If necessary, gradually let off on the throttle and/or steer to the outside of the turn.

Remember:

Avoid higher speeds until you are thoroughly familiar with the operation of your snowmobile.



RIDING UPHILL

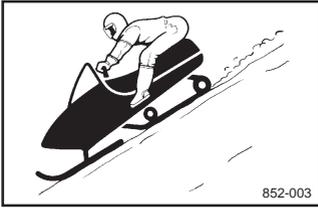
You should practice first on gentle slopes. Try more difficult climbs only after you have developed your skill. As you approach a hill, accelerate before you start the climb, and then reduce the throttle opening to prevent track slippage. It is also important to keep your weight on the uphill side at all times. On climbs straight up the hill this can be accomplished by leaning forward and, on steeper inclines, standing on the running boards and leaning forward over the handlebars. (Also see “CROSSING A SLOPE.”)

Slow down as you reach the crest of the hill, and be prepared to react to obstacles, sharp drops, or other people or vehicles which may be on the other side.

If you are unable to continue up a hill, do not spin the track. Stop the engine and set the parking brake. Then pull the rear of the snowmobile around to point the machine back down the hill. Do not get on the downhill side of the machine. When the snowmobile is pointed downhill, re-start the engine, release the parking brake, and descend the hill.

⚠ WARNING

Side hills and steep slopes are not recommended for a beginner or novice snowmobiler.



RIDING DOWNHILL

When riding downhill, keep speed to a minimum. It is important to apply just enough throttle to keep the clutch engaged while descending the hill. This will allow you to use engine compression to help slow the machine, and to keep the snowmobile from rolling freely down the hill. Also apply the brake frequently, with light pressure.

⚠ WARNING

Use extra caution when applying the brake during a descent. Excessive braking will cause the track to lock and will cause a loss of control.



CROSSING A SLOPE (SIDE HILL)

⚠ WARNING

Side hills are not recommended for a beginner or novice snowmobiler.

Crossing the face of a slope (side hill) requires you to properly position your weight to maintain proper balance. As you travel across the slope, lean your body to position your weight towards the uphill side. A recommended riding position is to kneel with the knee of the downhill leg on the seat and the foot of the uphill leg on the running board. This position will make it easier for you to shift your body weight as needed.

Snow and ice are slippery, so be prepared for the possibility that your snowmobile could begin to slip sideways on the slope. If this happens, steer in the direction of the slide if there are no obstacles in your path. As you regain proper balance, gradually steer again in the direction you wish to travel.

If your snowmobile starts to tip, steer down the hill to regain balance.

⚠ WARNING

If you are unable to maintain correct balance, and your snowmobile is going to tip over, dismount your snowmobile immediately on the uphill side.

ICE OR ICY SURFACE

Operating on ice or icy surfaces can be very dangerous. Traction for turning, stopping or starting is much less than that on snow.

WARNING

When you have to operate on ice or icy surfaces, drive slowly and cautiously. Avoid rapid acceleration, turning or braking. Steering is minimal and uncontrolled spins are an ever-present danger.

HARD-PACKED SNOW

It can be more difficult to negotiate on hard-packed snow as both skis and track do not have as much traction. Avoid rapid acceleration, turning or braking.

OPERATION ON SURFACES OTHER THAN SNOW OR ICE

Operation of your snowmobile on surfaces other than ice or snow should be avoided. Operation under such conditions will damage or result in rapid wear of the ski runners, drive track, slide runners and drive sprockets. Operation of the machine under the following conditions should be avoided at all costs:

1. Dirt
2. Sand
3. Rocks
4. Grass
5. Bare pavement

Other conditions that should be avoided for the sake of drive track and slide runner life are:

1. Glare ice surfaces
2. Snow mixed with a lot of dirt and sand

All the above conditions have one thing in common in regard to drive track and slide runners; little or no lubricating ability. Drive track and all slide rail systems require lubrication (snow or water) between the plastic runners and the metal track inserts. In the absence of lubrication, the plastic runners will rapidly wear and in severe cases, literally melt away, and the drive track will be subjected to damage and/or failure.

Also, traction aids such as studs, cleats etc., may cause further track damage and/or failure.

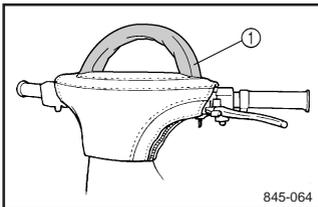
⚠ WARNING

Drive track damage and/or failure could result in loss of braking ability and machine control, which could cause an accident.

- Always check the drive track for damage or misadjustment before operating the machine.
- Do not operate the machine if you find damage to the drive track.

CAUTION:

Ride on fresh snow frequently. Operating on ice or hard packed snow will rapidly wear the slide runners.



ESU00234*

STRAP (PZ500ML)

The strap ① is only for experienced operator to assist in traverse (side-hill) riding.

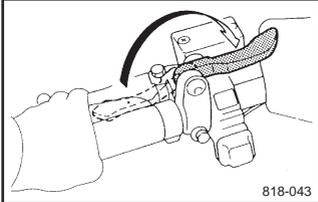
⚠ WARNING

Improper use of the strap on the handlebar can result in severe injury or death.

- Use the strap only as an operator grip point when needed to shift weight uphill to maintain balance during traverse (side-hill) riding. Only experienced operators should traverse slopes steep enough to require strap use.
- Keep the right hand on the right handlebar grip for steering, and grip the strap with the left hand to shift weight uphill for balance during traverse riding.
- Ride cautiously while using the strap. Do not accelerate or decelerate abruptly while holding onto the strap.
- Do not use the strap to lift the snowmobile.
- Do not use the strap as a mounting point for cargo or accessories.

DRIVING**⚠ WARNING**

Be sure to read “SAFETY INFORMATION” and “RIDING YOUR SNOWMOBILE” carefully before operating the machine.



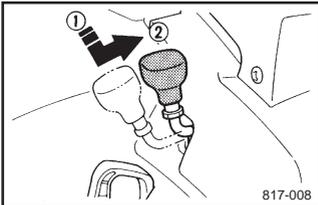
818-043

NOTE:

Be sure the engine is warmed up enough before riding.

PZ500/PZ500ML

1. Release the parking brake by moving the parking brake lever to the right.
2. Press the throttle lever slowly to move the machine.
3. Turn the handlebar in the desired direction.
4. Squeeze the brake lever to stop the machine.
5. Apply the parking brake – move the parking brake lever to the left.

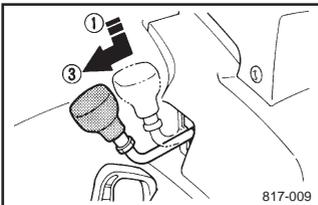


817-008

VT500XL

1. Select the desirable shifting position by moving the shift lever.

- ① Push down
- ② “FWD” Forward
- ③ “REV” Reverse



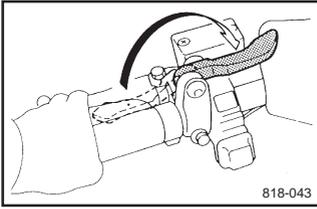
817-009

⚠ WARNING

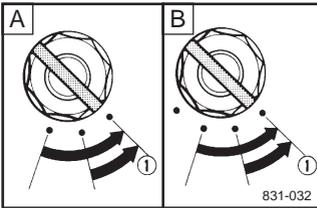
- Be sure the throttle lever is fully released and the machine is at a full stop before shifting.
- Be sure to move the shift lever to forward or reverse until it stops completely while the engine is idling.
- Be sure the area behind is clear before reversing. Watch behind.
- Reduce speed and avoid sharp turning when reversing.

NOTE:

The back buzzer beeps while the shift lever is in reverse.



2. Release the parking brake by moving the parking brake lever to the right.
3. Press the throttle lever slowly to move the machine.
4. Turn the handlebar in the desired direction.
5. Squeeze the brake lever to stop the machine.
6. Apply the parking brake – move the parking brake lever to the left.



ESS48200

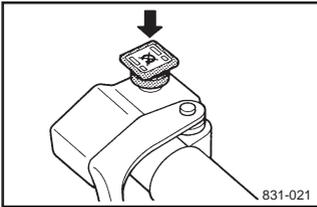
STOPPING THE ENGINE

1. Turn the main switch to the “OFF” position to stop the engine.

① “OFF”

A PZ500/PZ500ML

B VT500XL



⚠ WARNING

- Push down the engine stop switch to stop the engine in an emergency.
- Be sure the key is removed from the switch whenever the operator leaves the machine, to prevent accidental starting.

TRANSPORTING

When transporting your machine on a trailer or in a truck, observe the following recommendations to help protect your machine from damage:

- Make sure that the fuel level in the fuel tank is lower than the carburetors. Otherwise, the vibration and bumps from the road surface could make it possible for fuel to flow through the carburetor into the crankcase. This can result in "hydrostatic lock," a condition where the engine cannot rotate because of fuel accumulated in the engine. Severe engine damage can result from hydrostatic lock. When possible, the fuel tank should be empty during transportation, especially if the trip will be 30 minutes or longer.
- If transporting the machine in an open trailer or truck, put a tight fitting cover on the machine. A cover specifically designed for your snowmobile is best. This will help keep foreign objects out of the cooling vents in the shroud, and also help protect the machine against damage from debris on the road.
- If transporting the machine in an open trailer or truck in areas where road salt is used, coat metal suspension surfaces lightly with oil or other protectant. This will help protect against corrosion. Be sure to clean the machine when you get to your destination to remove any corrosive salts.

PERIODIC MAINTENANCE

ESS50103

MAINTENANCE CHART

Regular maintenance is most important for best performance and safe operation.

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every	Page
				Seasonally or 3,200 km (2,000 mi) (160 hr)	
Spark plug	Check condition. Adjust gap and clean. Replace if necessary.			●	8-4 ~ 8-5
Engine oil	Check oil level.	●			6-2
	* Air bleed the oil pump if necessary.			●	
Fuel	Check fuel level.	●			6-1 ~ 6-2
* Fuel filter	Check condition. Replace if necessary.			●	
* Fuel line	Check fuel hose for cracks or damage. Replace if necessary.			●	
* Oil line	Check oil hose for cracks or damage. Replace if necessary.			●	
Carburetor	Check throttle lever operation.	●			6-2, 8-6
	* Adjust the jets.	Whenever operating condition (elevation/temperature) is changed.			
* Fan belt	Check wear and damage. Replace if necessary.			●	8-10
	Adjust fan belt if necessary.			●	
Manual starter	Check operation and rope damage. * Replace if necessary.	●			6-2
Engine stop switch	Check operation. * Repair if necessary.	●			5-4
Throttle override system (T.O.R.S.)	Check operation. * Repair if necessary.	●			5-3, 6-2 ~ 6-3
Throttle lever	Check operation. * Repair if necessary.	●			5-2, 6-2

* It is recommended that these items be serviced by a Yamaha dealer.

Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every	Page
				Seasonally or 3,200 km (2,000 mi) (160 hr)	
* Exhaust system	Check for leakage. Retighten or replace gasket if necessary.			●	
* Decarbonization	More frequently if necessary.			●	
Drive V-belt guard	Check cracks, bends or damage. * Replace if necessary.	●			5-5, 6-4
Drive V-belt	Check wear and damage. Replace if necessary.	●			6-4, 8-10 ~ 8-12
Drive track/Idler wheels	Check deflection, wear and damage. * Adjust/replace if necessary.	●			6-5, 8-19 ~ 8-21
Slide runners	Check wear and damage.	●			6-6
	* Replace if necessary.			●	
Brake/ Parking brake	Check operation and fluid leakage.	●			5-5, 6-3 ~ 6-4, 8-14 ~ 8-15
	* Adjust free play and/or replace pads if necessary.			●	
	* Replace brake fluid.	See NOTE on page 8-3.			8-15
Drive chain oil	Check oil level.		●		8-13
	* Replace.			●	
Drive chain	Check deflection. * Adjust if necessary.	Initial at 80 km (50 mi) and every 800 km (500 mi) thereafter.			8-14
Ski/ Ski runner	Check wear and damage.	●			6-7
	* Replace if necessary.			●	
Steering system	Check operation.	●			6-6
	* Adjust toe-out if necessary.			●	
Strap	Check damage. * Replace if necessary.	●			
Lights	Check operation. Replace bulbs if necessary.	●			6-6, 8-24

* It is recommended that these items be serviced by a Yamaha dealer.

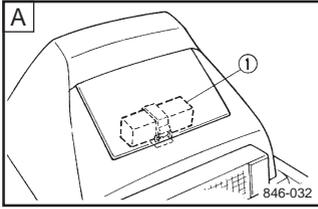
Item	Remarks	Pre-operation check (Daily)	Initial 1 month or 800 km (500 mi) (40 hr)	Every	Page
				Seasonally or 3,200 km (2,000 mi) (160 hr)	
Battery	Check fluid level.	●			6-7, 8-25
	* Check specific gravity and breather pipe operation. Charge/Correct if necessary.			●	
* Primary sheave	Check engagement and shift speed.			●	
	Adjust if necessary.	Whenever operating elevation is changed.			
	Check wear and damage. Replace if necessary.			●	
	Lubricate with specified grease.			●	
* Secondary sheave	Lubricate with specified grease.			●	
	Adjust if necessary.	Whenever operating elevation is changed.			
* Steering column bearing	Lubricate with specified grease.			●	
* Ski and front suspension	Lubricate with specified grease.			●	8-23
* Suspension component	Lubricate with specified grease.			●	8-23
* Parking brake cable end and lever end/throttle cable end	Lubricate with specified grease.			●	8-23
	Check cable damage. Replace if necessary.			●	
Shroud latches	Make sure the shroud latches are hooked.	●			5-6
Fittings/Fasteners	Check tightness. * Repair if necessary.	●			6-8
Service tools/Spare parts	Check proper placement.	●			6-8

* It is recommended that these items be serviced by a Yamaha dealer.

NOTE: _____

Brake fluid replacement:

1. When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. Replace the brake hoses every four years, or if cracked or damaged.



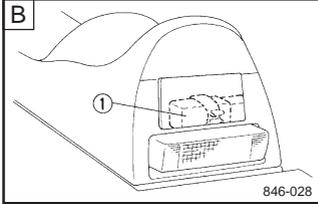
TOOL KIT

The owner's tool kit has the tools which are sufficient for most periodic maintenance and minor repair. A torque wrench is also necessary to properly tighten nuts and bolts.

① Tool kit

Ⓐ PZ500/PZ500ML

Ⓑ VT500XL



CAUTION:

Before starting the engine, make sure that the tool kit box is firmly seated in the holder and is secured with the holding band.

NOTE:

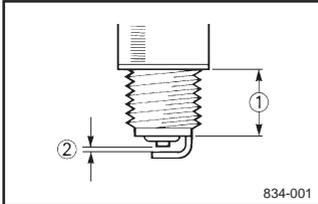
If you do not have a torque wrench available during a service operation which requires one, take your machine to a Yamaha dealer to check the torque settings and adjust them if necessary.

SPARK PLUG INSPECTION

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate the condition of the engine. Check the coloration on the white porcelain insulator around the center electrode. The ideal coloration at this point is a medium to a light tan color for a machine that is being ridden normally. If a spark plug shows a distinctly different color, there could be something wrong with the engine. For example, a very white center electrode porcelain color could indicate an intake track air leak or carburetion problem for that cylinder. Do not attempt to diagnose such problems yourself. Instead, take the machine to your Yamaha dealer. You should periodically remove and inspect the spark plug because heat and deposits will cause a spark plug to slowly break down and erode. Consult your dealer before changing to a different type of spark plug.

Standard spark plug: BR9ES (NGK)

Spark plugs are produced in several different thread lengths. The thread length (reach) is the distance from the spark plug gasket seat to the end of the threaded portion. If the reach is too long, overheating and engine damage may result. If the reach is too short, spark plug fouling and poor performance may result. Also, if too short, carbon will form on the exposed threads resulting in combustion chamber hot spots and thread damage. Always use a spark plug with the proper reach.



Spark plug reach ①: 19.0 mm (0.75 in)

Before installing any spark plug, measure the electrode gap with a wire thickness gauge and adjust to specification.

Spark plug gap ②: 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

When installing the plug, always clean the gasket surface. Wipe off any grime from the threads and torque the spark plug properly.

Spark plug torque: 20 Nm (2.0 m·kg, 14 ft·lb)

ESS52400

ENGINE IDLE SPEED ADJUSTMENT

CAUTION:

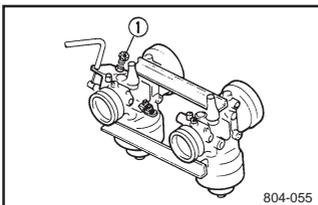
- Be sure this adjustment is serviced by a Yamaha dealer.
- Be sure the throttle lever moves smoothly.
- Be sure the carburetor is synchronized first.

1. Start the engine.

NOTE:

Refer to STARTING THE ENGINE.

2. Turn the throttle stop screw ① in or out to adjust the engine idle speed.

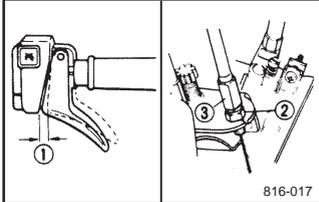


Standard engine idle speed: 1300 ± 100 r/min

THROTTLE CABLE ADJUSTMENT**CAUTION:** _____

Be sure the engine idle speed is adjusted first.

1. Loosen the adjuster locknut.
2. Turn the adjuster in or out until proper throttle lever free play is achieved.



Throttle lever free play ①:
1.0 ~ 2.0 mm (0.04 ~ 0.08 in)

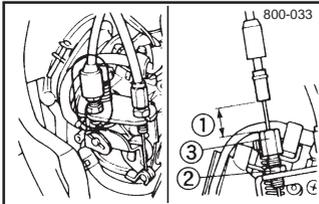
- ② Locknut
③ Adjuster

3. Tighten the locknut.

OIL PUMP CABLE ADJUSTMENT**CAUTION:** _____

Be sure the throttle cable is adjusted first.

1. Loosen the adjuster locknut.
2. Pull the oil pump outer cable and adjust the free play between the adjuster and outer cable by turning the adjuster in or out.



Pump cable free play ①: 19 ± 1 mm (0.75 ± 0.04 in)

- ② Locknut
③ Adjuster

3. Tighten the locknut.

CARBURETOR ADJUSTMENT

CAUTION:

- Be sure this adjustment is serviced by a Yamaha dealer.
- Be sure the carburetor silencer is installed during running to prevent engine damage.

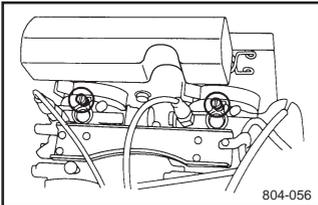
Under some operating conditions the carburetor setting may have to be changed due to air temperature changes, elevation changes, use of alcohol oxygenated fuels, etc. and should be done by an authorized Yamaha dealer.

CAUTION:

The drive chain gears and V-belt clutch should be adjusted when operating over 900 m (3000 ft) high altitude. Consult a Yamaha dealer.

Pilot Screw Adjustment

Turn the pilot screw in or out to adjust low speed tuning.



Standard pilot screw position:
1.0 turn out from the seated position

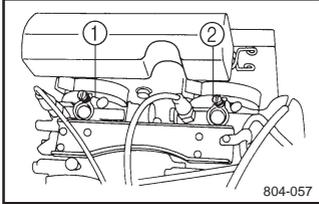
Pilot screw	Mixture	Condition
Turn in	Leaner	Warm weather
		High altitude
Turn out	Richer	Cold weather
		Low altitude

Main Jet Replacement

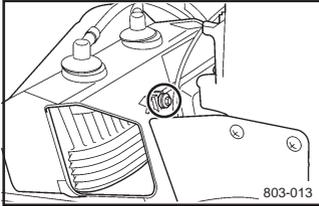
Replace the main jet according to the setting chart which is available at an authorized Yamaha dealer.

⚠ WARNING

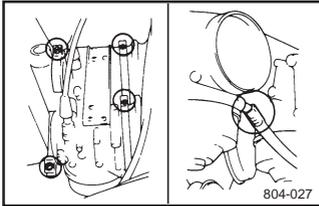
- **Never remove the drain plug or the float chamber while the engine is hot.**
Fuel will flow out from the float chamber which could ignite and cause injury.
- **Place a rag under the carburetor before removing the drain plug or float chamber to catch any spilled fuel.**
- **Handle fuel with care: it is highly flammable.**



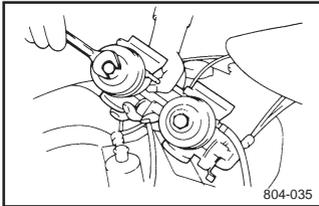
804-057



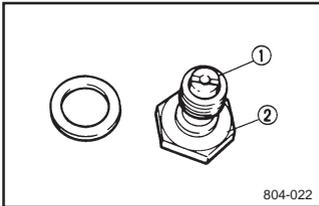
803-013



804-027



804-035



804-022

Standard main jet:

- ① Left-side carburetor (P.T.O. side)
#143.8
- ② Right-side carburetor (Magneto side)
#142.5

Main jet	Mixture	Condition
Smaller No.	Leaner	Warm weather
		High altitude
Larger No.	Richer	Cold weather
		Low altitude

1. Remove the air chamber.
2. Loosen the carburetor clamps and remove the carburetor.
3. Pinch the fuel hose to prevent fuel flowing.
4. Remove the drain plug and install the proper main jet.
5. Assemble by reversing removal steps.

- ① Main jet
- ② Drain plug

⚠ WARNING

Be sure the throttle outer cable is firmly seated in the holder and throttle operates smoothly after assembling the carburetor.

HIGH ALTITUDE ADJUSTMENTS

Operating at high altitude reduces the performance of a gasoline engine, about 3% for every 305 m (1000 ft) of elevation. This is because there is less air as altitude increases. Less air means less oxygen available for combustion.

Your snowmobile can be adjusted to overcome most of the problems found in high altitude riding. Carburetor adjustments are the most important. Less air at high altitude makes the fuel/air ratio too rich, which can cause poor performance. Common problems are hard starting, bogging, and plug fouling. Follow the Main Jet Setting chart which is available at an authorized Yamaha dealer carefully. Proper carburetion adjustments will correct the fuel/air ratio.

Remember: less air at higher altitude means there is less horsepower available, even with proper carburetion. Expect acceleration and top speed to be reduced at higher altitudes.

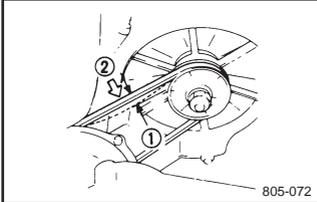
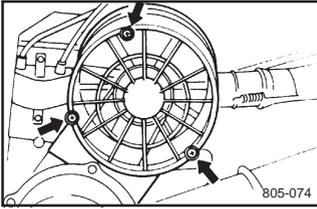
To overcome operating with less power at high altitudes, your snowmobile may also require different clutch and driveline settings to avoid poor performance and rapid wear. If you plan to operate your snowmobile at an altitude different from the area where you bought your machine, be sure to consult your Yamaha dealer. He can tell you if there are any changes necessary for the altitude where you plan to ride.

CAUTION:

The drive chain gears and V-belt clutch should be adjusted when operating over 900 m (3000 ft) high altitude. Consult a Yamaha dealer.

FAN BELT**Deflection check**

1. Remove the fan cover.
2. Measure the fan belt deflection by applying 50 N {5 kg (11 lb)} of force at the center of belt.



- ① Deflection
- ② 50 N {5 kg (11 lb)}

Standard belt deflection:
8 mm (0.31 in)/50 N {5 kg (11 lb)}

If the deflection exceeds the specification, consult a Yamaha dealer.

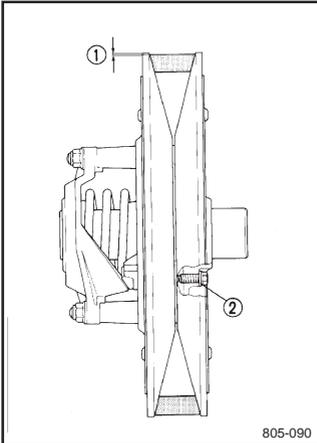
DRIVE V-BELT REPLACEMENT**⚠ WARNING**

When installing the new belt, be sure the V-belt is positioned 0 ~ 2 mm (0 ~ 0.08 in) below the secondary sheave edge ①.

If not, the clutch engagement speed will be changed. The machine may move unexpectedly when the engine is started.

Adjust the V-belt position by removing or adding a spacer ② on each adjusting bolt.

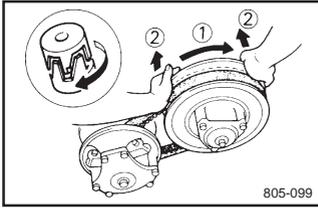
For this adjustment, consult a Yamaha dealer.

**CAUTION:**

As the V-belt wears, adjustment may be necessary. To ensure proper clutch performance, the V-belt position should be adjusted by adding a spacer on each adjusting bolt when the V-belt position reaches 3 mm (0.12 in).

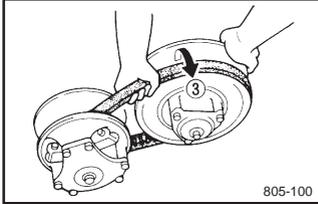
For this adjustment, consult a Yamaha dealer.

New belt width	35 mm (1.38 in)
Belt wear limit width	33 mm (1.30 in)

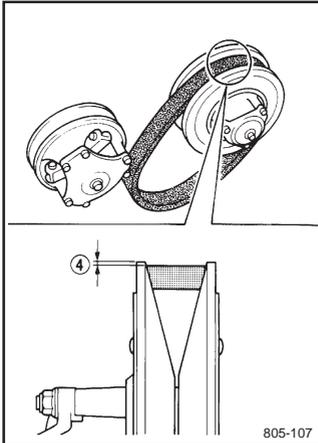


NOTE: _____

Apply the parking brake before replacement.

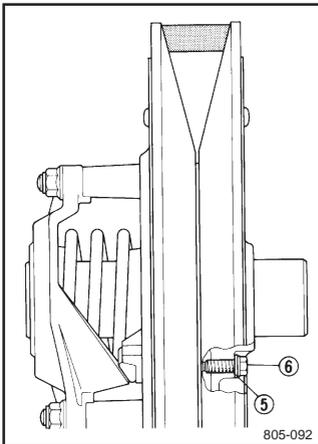


1. Remove the drive V-belt guard.
2. Rotate the secondary sliding sheave clockwise ① and push ② it so that it separates from the fixed sheave.
3. Pull ③ the belt up over the secondary fixed sheave.
4. Remove the belt from the secondary sheave and primary sheave.



5. Put the new V-belt back on the secondary sheave only. Do not force the V-belt between the sheaves; the sliding and fixed sheave must touch each other. Measure the V-belt position.

Standard V-belt position ④:
Below the sheave edge
0 ~ 2 mm (0 ~ 0.08 in)

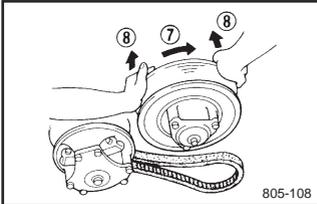


6. If the position is incorrect, adjust the V-belt position by removing or adding a spacer ⑤ on each adjusting bolt ⑥.

V-belt position	Adjustment
Above the edge	Remove spacer
Below the edge 0 ~ 2 mm (0~ 0.08 in)	Not necessary (It is correct.)
Below the edge more than 2 mm (0.08 in)	Add spacer

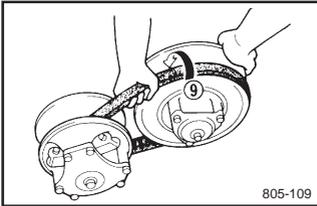
7. Tighten each adjusting bolt.

Adjusting bolts tightening torque:
10 Nm (1.0 m·kg, 7.2 ft·lb)



8. Install the V-belt over the primary sheave.

9. Rotate the secondary sliding sheave clockwise ⑦ and push ⑧ it so that it separates from the fixed sheave.



10. Install the belt ⑨ between the secondary sliding and fixed sheaves.

11. Install the drive V-belt guard.

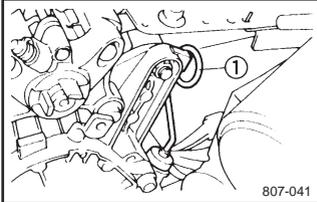
⚠ WARNING

Never run the engine without the drive V-belt or with the drive V-belt guard removed.

DRIVE CHAIN HOUSING**Oil level checking****⚠ WARNING**

The engine and muffler will be very hot after the engine has been run.

Avoid touching the engine and muffler while they are still hot with any part of your body or clothing during inspection or repair.



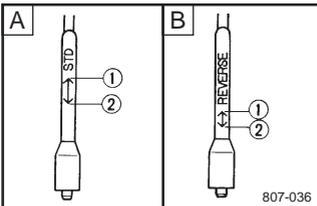
807-041

1. Place the machine on a level surface.
2. Remove the dipstick ① and wipe it off with a clean rag. Then put the dipstick in the hole.

CAUTION:

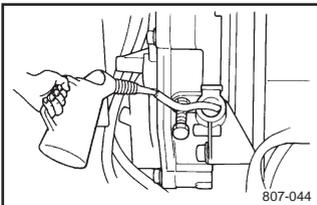
There is a magnet attached to the end of the dipstick. It is used to remove any metal particles that may accumulate in the drive chain housing. When removing the dipstick be sure to:

- Pull it out slowly and gently so the metal particles do not fall off the magnet back into the drive chain housing.
- Wipe off the magnet before reinserting the dipstick into the drive chain housing.



807-036

3. Pull up the dipstick and check that the oil is between the upper and lower levels. If not, add oil to the upper level.
- ① Upper level
② Lower level



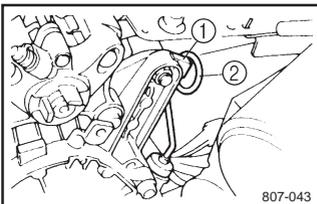
807-044

Drive chain oil: API GL-3
SAE 75 or 80

- Ⓐ For models without reverse transmissions (PZ500/PZ500ML)
Ⓑ For models with reverse transmissions (VT500XL)

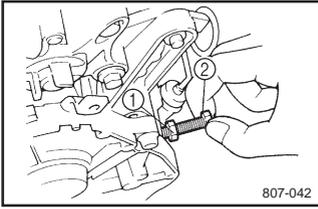
CAUTION:

Be sure no foreign material enters the gear case.



807-043

4. Reinstall the dipstick and fit the loop ② of the dipstick handle onto the projection ① of the gear case.



Chain Tension Adjustment

1. Loosen the locknut.
2. Turn the adjuster bolt clockwise until it is finger-tight.
3. Hold the adjuster bolt in place while tightening the chain adjuster locknut.

- ① Locknut
- ② Adjuster bolt

ESS61000

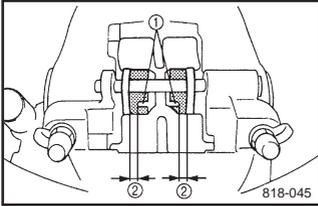
BRAKE

Checking Pad Wear

Check the brake pads for wear.

If the pads reach the wear limit, consult a Yamaha dealer for replacement.

- ① Wear indicator



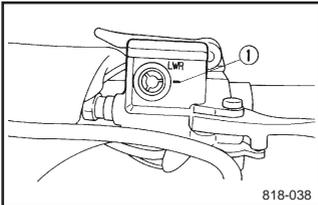
Wear limit ②: 1.5 mm (0.06 in)

ESS61100

Checking the brake fluid level

Place the machine on a level surface. Check that the brake fluid is above the lower level and replenish when necessary.

- ① Lower level



Recommended brake fluid: DOT 4

⚠ WARNING

Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock. If the brake fluid level goes down, consult a Yamaha dealer.

CAUTION:

Brake fluid may deteriorate painted surfaces or plastic parts. Never spill any fluid. If any is spilled, clean it up immediately.

BRAKE FLUID REPLACEMENT

Brake fluid replacement is necessary when the following components are replaced during the periodic maintenance or if they are damaged or leaking.

- All rubber seals of the master cylinder and caliper cylinder
- The brake system hose

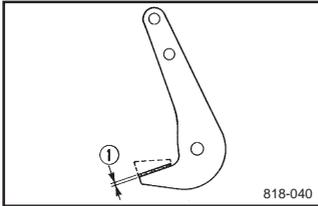
⚠ WARNING

Be sure the brake fluid and the above parts are replaced by a Yamaha dealer.

PARKING BRAKE Checking Pad Wear

Check the parking brake pads for wear by measuring the thickness of the pads.

If the pads reach the wear limit, consult a Yamaha dealer for replacement.



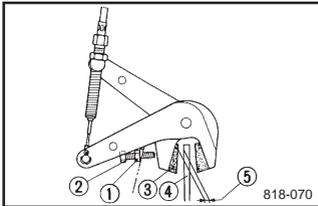
Wear limit ①: 1.0 mm (0.04 in)

Adjustment

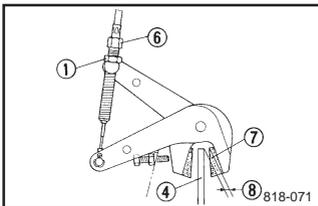
As the pads wear, adjustment may be necessary to ensure proper brake performance.

⚠ WARNING

Be sure this adjustment is made by a Yamaha dealer.



Clearance ⑤: 1.2 ~ 1.3 mm (0.047 ~ 0.051 in)



Clearance ⑧: 1.2 ~ 1.3 mm (0.047 ~ 0.051 in)

- Tighten the locknut.

SUSPENSION

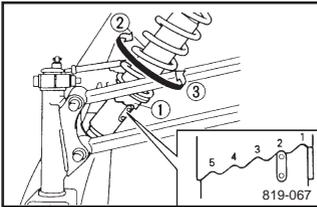
The suspension can be adjusted to suit rider preference. A softer setting, for example, may provide greater rider comfort, while a stiffer setting may allow more precise handling and control over certain types of terrain or riding conditions.

⚠ WARNING

Be sure this adjustment is made by a Yamaha dealer.

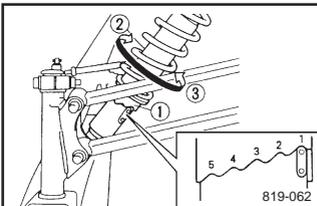
Ski Spring Preload

The spring preload can be adjusted by turning the adjuster ①.



PZ500/VT500XL

Spring adjuster position	5	4	3	2	1
Preload	② Harder			Softer ③	
Standard	2				



PZ500ML

Spring adjuster position	5	4	3	2	1
Preload	② Harder			Softer ③	
Standard	1				

CAUTION:

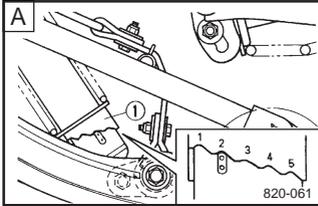
Be sure the left and right spring preload is the same.

Rear Suspension Spring Preload

The spring preload can be adjusted by turning the adjuster ①.

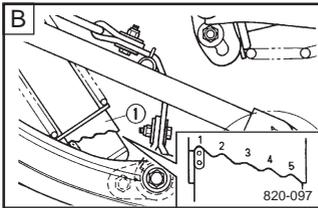
⚠ WARNING

Be sure this adjustment is made by a Yamaha dealer.



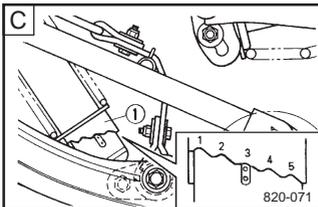
PZ500

Spring adjuster position	1	2	3	4	5
Preload	Softer			Harder	
A Standard (Front)	2				



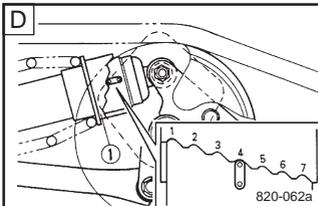
PZ500ML

Spring adjuster position	1	2	3	4	5
Preload	Softer			Harder	
B Standard (Front)	1				



VT500XL

Spring adjuster position	1	2	3	4	5
Preload	Softer			Harder	
C Standard (Front)	3				



PZ500/PZ500ML/VT500XL

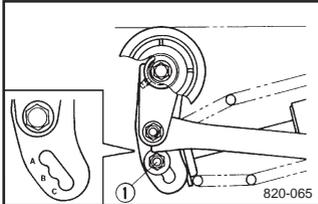
Spring adjuster position	1	2	3	4	5	6	7
Preload	Softer			Harder			
D Standard (Rear)	4						

FULL RATE ADJUSTER

The total suspension spring rate and damping characteristics can be adjusted by changing the installed position of the shock-absorber assembly.

⚠ WARNING

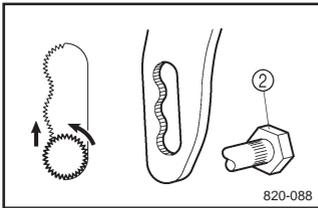
Be sure this adjustment is made by a Yamaha dealer.



Installation position	C	B	A
Spring rate and damping	Hard	Medium	Soft
Standard	B		

NOTE:

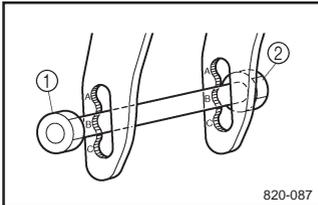
Be sure to make this adjustment when there is no load (rider or cargo) on the snowmobile.



- Loosen the nut ① 1/2 or 3/4 turns, while holding the adjusting bolt ② securely with a wrench so it does not move.

CAUTION:

Never allow the adjusting bolt ② to move while loosening the nut.



- Turn the adjusting bolt ② to the desired position.

CAUTION:

Be sure the adjusting bolt ends are set at the same position on each side.

- While holding the adjusting bolt securely, tighten the nut ①.

Nut tightening torque: 49 Nm (4.9 m·kg, 35.4 ft·lb)

CAUTION:

Never allow the adjusting bolt to move while tightening the nut.

TRACK ADJUSTMENT

⚠ WARNING

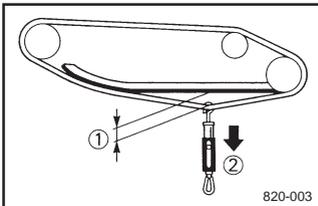
A broken track, track fittings, or debris thrown by the track could be dangerous to an operator or bystanders.

Observe the following precautions:

- Do not allow anyone to stand behind the machine when the engine is running.
- When the rear of the machine is raised to allow the track to spin, a suitable stand must be used to support the rear of the machine. Never allow anyone to hold the rear of the machine off the ground to allow the track to spin. Never allow anyone near a rotating track.
- Inspect the track condition frequently. Replace damaged track guide clips. Replace the track if it is damaged to the depth where fabric reinforcement material is visible or support rods are broken. Otherwise, track damage and/or failure could result in loss of braking ability and machine control, which could cause an accident.
- Never install studs (cleats) closer than three inches from the edge of the track.

Track Deflection Measurement

1. Lay the machine on its side.
2. Measure the track deflection with a spring scale. Pull at the center of the track with a force of 100 N {10 kg (22 lb)}.



NOTE:

Measure the gap between the slide runner and the edge of the track window. Measure both sides.

- ① Deflection
- ② 100 N {10 kg (22 lb)}

Standard track deflection:

PZ500/VT500XL

25 ~ 30 mm (0.98 ~ 1.18 in)/100 N {10 kg (22 lb)}

PZ500ML

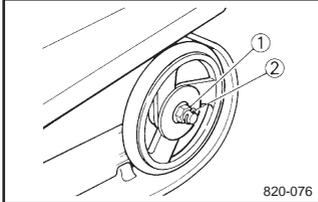
20 ~ 25 mm (0.79 ~ 0.98 in)/100 N {10 kg (22 lb)}

3. If the deflection is incorrect, adjust the track.

Track Adjustment

⚠ WARNING

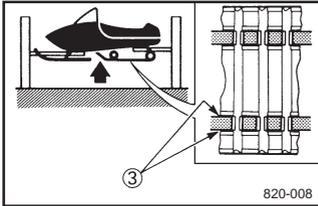
- Be sure this adjustment is made by a Yamaha dealer.
- Support the machine securely on a suitable stand before working underneath the machine.
- Operate the engine in a well-ventilated area.



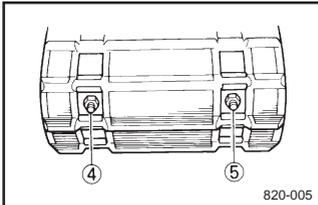
1. Lift the rear of the machine onto a suitable stand to raise the track off the ground.
2. Loosen the rear axle nut (1).

NOTE:

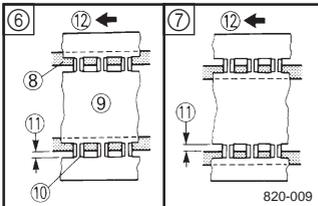
It is not necessary to remove the cotter pin (2).



3. Start the engine and rotate the track one or two turns. Stop the engine.
4. Check the track alignment with the slide runner (3). If the alignment is incorrect, turn the left and right adjusters to adjust.



Track alignment	⑥ Shifted to right	⑦ Shifted to left
④ Left adjuster	Turn out	Turn in
⑤ Right adjuster	Turn in	Turn out



- ⑧ Slide runner
- ⑨ Track
- ⑩ Track metal
- ⑪ Gap
- ⑫ Forward

5. Adjust track deflection to the specified amount.

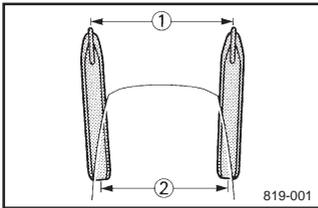
Track deflection	More than specified	Less than specified
④ Left adjuster	Turn in	Turn out
⑤ Right adjuster	Turn in	Turn out

CAUTION:

The adjusters should be turned an equal amount.

6. Recheck alignment and deflection. If necessary, repeat steps 3 to 5 until the proper adjustment is achieved.
7. Tighten the rear axle nut.

Rear axle tightening torque:
75 Nm (7.5 m·kg, 54.2 ft·lb)



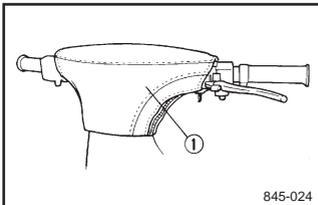
ESS62900

SKI ALIGNMENT

1. Turn the handlebars so the skis face straight ahead.
2. Check the following for ski alignment:
 - 1) Ski is facing forward.
 - 2) Ski toe-out (① - ②) is within specification.

Ski toe-out (① - ②): 0 ~ 15 mm (0 ~ 0.59 in)

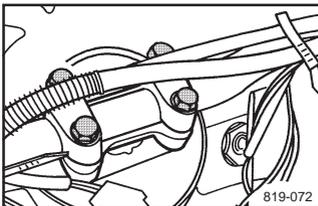
3. If the alignment is not correct, consult a Yamaha dealer.



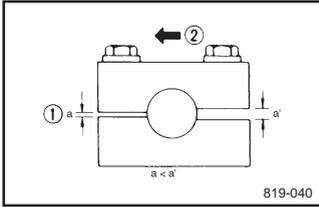
ESS63000

HANDLEBAR ADJUSTMENT (PZ500/VT500XL)

1. Remove the handlebar cover ①.
2. Loosen the handlebar bolts. Move the handlebar assembly up or down to adjust the handlebar height to the desired position.
3. Tighten the handlebar bolts and install the handlebar cover.



Handlebar bolt tightening torque:
14.5 Nm (1.45 m·kg, 10.5 ft·lb)



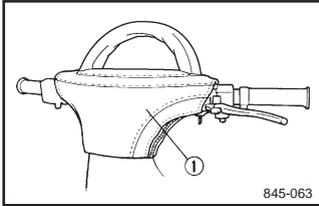
CAUTION: _____

Be sure the small gap ① side of the holder faces forward ②.

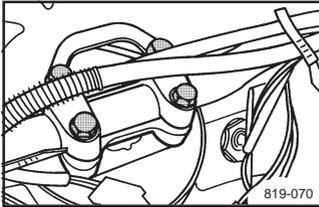
ESU00236

HANDLEBAR ADJUSTMENT (PZ500ML)

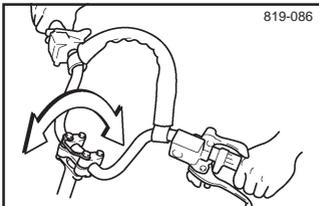
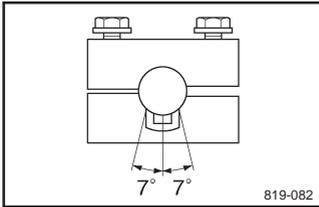
1. Remove the handlebar cover ①.



2. Loosen the handlebar bolts.

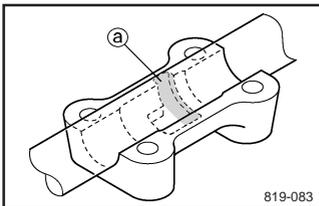


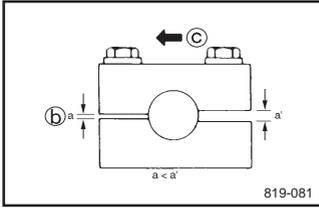
3. Move the handlebar up or down ($\pm 7^\circ$) to adjust the handlebar height to the desired position.



CAUTION: _____

Be sure the projection on the handlebar is not installed into the area ① shown.



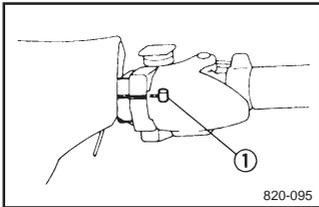


4. Tighten the handlebar bolts and install the handlebar cover.

Handlebar bolt tightening torque:
23 Nm (2.3 m-kg, 17 ft-lb)

CAUTION:

Be sure the small gap **b** side of the handlebar holders faces forward **C**.



ESS6601

LUBRICATION

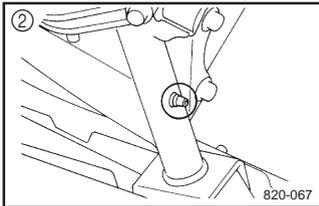
Lubricate the following points.

Lubricant: Low-temperature grease

① Throttle cable ends

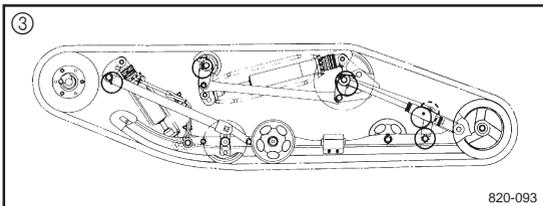
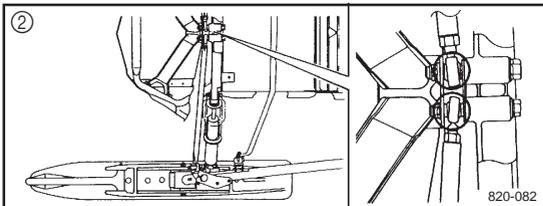
⚠ WARNING

Apply a dab of grease onto the cable end only. Do not grease the brake/throttle cables themselves because they could become frozen, which could cause loss of control.



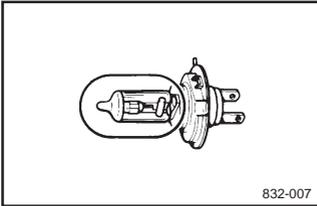
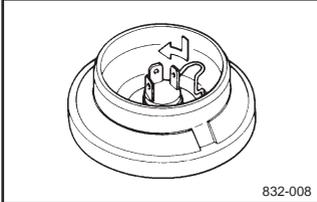
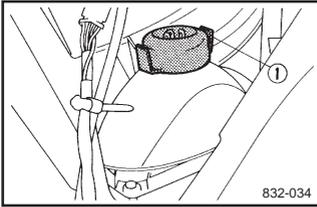
② Front suspension

③ Rear suspension



HEADLIGHT**Bulb Replacement**

1. Lift up the shroud.
2. Disconnect the lead coupler.
3. Remove the bulb cover.
4. Remove the bulb holder by depressing and turning it counterclockwise.



① Bulb cover

5. Remove the bulb.

⚠ WARNING

Keep flammable products or your hands away from the hot bulb until it cools down.

6. Install the new bulb.

Bulb type: 12 V, 60/55 W

CAUTION:

Keep oil or your hands away from the glass part of bulb or its life and illumination will be affected.

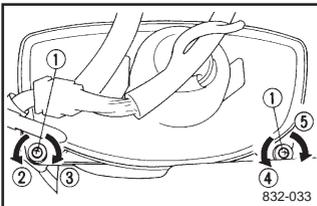
If the glass is oil stained, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.

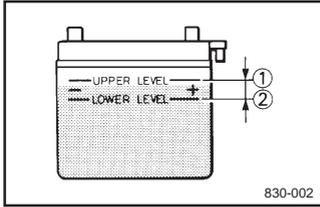
Beam Adjustment

1. Turn the adjuster ① in or out to adjust the headlight beam.

Beam moves:

- ② Down and to the left
- ③ Up and to the right
- ④ Down and to the right
- ⑤ Up and to the left





BATTERY (VT500XL)

Replenishing the battery fluid

1. Check the fluid level. The level should be between the upper and lower level marks.

① Upper level

② Lower level

2. Add only distilled water if necessary.

CAUTION:

Normal tap water contains minerals which are harmful to a battery; refill only with distilled water.

⚠ WARNING

Battery electrolyte is poisonous and dangerous. It contains sulfuric (sulphuric) acid and can cause severe burns. Avoid contact with the skin, eyes or clothing.

Antidote:

EXTERNAL-Flush with water.

INTERNAL-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately.

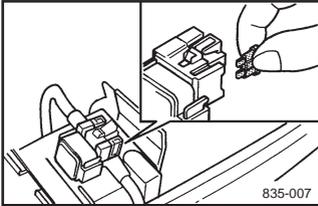
Eyes:

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

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in closed space. Always cover eyes when working near batteries. **KEEP OUT OF REACH OF CHILDREN.**

FUSE REPLACEMENT (VT500XL)**⚠ WARNING**

Be sure to use the specified fuse. A wrong fuse will cause electrical system damage and can be A FIRE HAZARD.

**CAUTION:**

Be sure the main switch is turned off to prevent accidental short circuiting.

1. Lift up the shroud.
2. Replace the blown fuse with a fuse of the proper amperage.

NOTE:

If the fuse immediately blows again, consult a Yamaha dealer.

Fuse type: 10 A

TROUBLESHOOTING

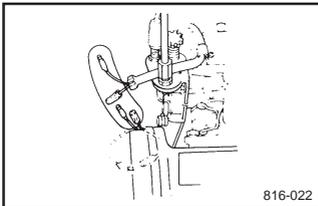
A. Engine turns over but doesn't start

1. Fuel System

- No fuel supplied to combustion chamber
- No fuel in tank ... Supply fuel.
- Clogged fuel line ... Clean fuel line.
- Clogged carburetor ... Clean carburetor.
- Fuel supplied to combustion chamber.
- Flooded engine (too much choke) ... Crank engine with throttle open or wipe spark plug dry.

2. Electrical System

- Poor or no spark
- Spark plug dirty with carbon/wet ... Remove carbon/wipe spark plug dry, or replace spark plug.
- Faulty ignition system ... Consult dealer.
- T.O.R.S. system malfunction ... Disconnect the carburetor switch connectors and connect the wire harness connectors together to bypass T.O.R.S.



⚠ WARNING

- **Before bypassing the T.O.R.S., be sure the throttle returns properly to the fully-closed position.**
- **The T.O.R.S. is an important safety device; in the case of a malfunction, take the machine to a Yamaha dealer immediately for repair.**

3. Compression

- Insufficient
- Loose cylinder head nuts ... Tighten nuts properly.
- Damaged gasket ... Replace gasket.
- Worn out piston and cylinder ... Consult dealer.

B. Engine does not turn over with manual starter

1. Seized engine ... Seizure is caused by poor lubrication, inadequate fuel, or an air leak — Consult dealer.
2. "Hydrolock" (fuel has filled crankcase when vehicle was transported) ... Remove spark plug(s), turn engine over several times with ignition off to expel excess fuel. Consult dealer.

C. Electric starter does not operate or operates slowly (VT500XL)

1. Faulty wire connections ... Check connections or consult dealer.
2. Battery discharged ... Check battery fluid and charge battery.
3. Engine trouble ... Check B above.

D. Engine power is low

1. Faulty spark plug(s) ... Clean or replace spark plug(s).
2. Jetting incorrect for altitude or temperature ... carburetor. Consult dealer.
3. Improper fuel flow ... See A.1. above.
4. Clutch settings not correct for altitude and/or conditions ... Consult dealer.

E. Engine constantly backfires or misfires

1. Faulty spark plug(s) ... Replace spark plug(s).
2. Fuel system clogged ... See A.1. above.
3. T.O.R.S. malfunction ... See T.O.R.S. in A.2. above.

F. Machine does not move

1. Clutch malfunction ... Consult dealer.
2. Drive track does not move ... Foreign object is caught in track, or slide runner has melted to track metal due to lack of lubrication.
3. Drive chain too tight, too loose, or broken ... Consult dealer.

G. Drive belt twists

1. Improper belt ... Replace with correct belt.
2. Clutch offset incorrect ... Consult dealer.
3. Engine mount loose or broken ... Consult dealer.

H. Drive belt slips or burns

1. Belt or sheave surface oily or dirty ... clean.
2. Problem with drive line ... See F above.

I. Engine does not upshift or downshift properly/engages harshly

1. Drive belt worn ... replace belt or consult dealer.
2. Clutch settings incorrect for altitude/conditions ... Consult dealer.
3. Primary clutch worn or sticking ... Consult dealer.
4. Secondary clutch worn or sticking ... Consult dealer.

J. Noise or excessive vibration in drive line

1. Broken clutch components ... Consult dealer.
2. Worn or damaged bearings ... Consult dealer.
3. Drive belt damaged or worn with flat spots ... Replace.
4. Idler wheel/shaft damage ... Consult dealer.
5. Track damaged ... Consult dealer.

STORAGE

Long term storage, requires some preventive procedures to guard against deterioration.

1. Cleaning

Thoroughly clean the machine, inside and out, to remove the corrosive salts and acids that can accumulate. Use Yamaha Mud and Grease Release, or an equivalent, to loosen mud, grease and grime. Wash with mild soap, then rinse and dry completely.

2. Lubrication

Lubricate moving parts, suspension linkage and pivot points. Use the grease or lubricant specified in the MAINTENANCE section, or Yamaha Lube-Zall general purpose lubricant. Proper lubrication fights corrosion while it reduces friction.

3. Fuel System Preparation

Add Yamaha Fuel Conditioner/Stabilizer, or an equivalent, to the fuel tank to help prevent fuel oxidation, gum and varnish deposits, and to inhibit corrosion in the fuel system and carburetor. In areas where oxygenated fuel ("gasohol") is used, completely drain the fuel system. Consult your Yamaha dealer.

4. Engine

Proper storage of the engine is essential to prevent costly rust and corrosion damage to internal engine components. This is more important than ever in those areas where oxygenated fuel ("gasohol") is used, because the alcohol content in the fuel increases the chance for water to enter the engine. Use Yamaha Stor-Rite Fogging Oil, or an equivalent, to protect both combustion chamber and crank-

shaft from corrosion. An alternate method is to remove the airbox and squirt oil into the carburetor throats while the engine is running.

CAUTION:

Do not attempt to store the machine by simply starting the engine occasionally during the storage period. This can cause more harm than good! Moisture and acids form during combustion which can actually increase the chance for corrosion damage during the storage period.

5. Protection

Apply a coat of wax, such as Yamaha Silicone Wax, to painted surfaces. Spray Yamaha Silicone Spray, or an equivalent protectant, on the exterior of the engine, on the track, and on other metal, plastic and rubber parts.

6. Battery (VT500XL)

Remove the battery from the machine and check the fluid level. Charge the battery. Store it in a cool, dry place that is above 0°C (32°F), but less than 30°C (90°F). Check battery condition with a hydrometer monthly, and charge as necessary.

⚠ WARNING

- **Never smoke or make and break connections at the battery while charging. Sparks may ignite the battery gas.**
- **Be sure the battery terminals are tight and that the battery vent tube is properly routed and is securely attached to the battery.**

CAUTION:

Do not charge battery quickly. Charge for 10 hours at 1.6 amperes.

7. Track

Loosen the track, and block up the chassis so that the track is suspended above the ground.

8. Drive Belt

Remove the drive belt and store separately.

9. Storage

Store the machine in a dry, well-ventilated place out of direct sunlight. Put a fabric (breathable) cover over it, preferably one designed for your machine. Do not use a plastic or vinyl cover — condensation could be trapped underneath which could increase the chance of rusting.

RETURN TO SERVICE AFTER STORAGE

When returning your machine to service, reinstall the drive belt and adjust the track. Reinstall the battery, and make sure that the battery vent tube is properly reinstalled and is not kinked.

Remove the spark plugs and clean them or replace them. Perform all other pre-operation and seasonal maintenance listed in the Periodic Maintenance chart.

For peak performance, it is recommended that you have your machine checked and tuned by your Yamaha dealer. He has the experience and training to help you get the maximum performance and use from your Yamaha.

SPECIFICATIONS

ESS73200

DIMENSIONS

	PZ500/PZ500ML/VT500XL
Overall length	2760 mm (108.7 in): PZ500 2970 mm (116.9 in): PZ500ML/VT500XL
Overall width	1200 mm (47.2 in): PZ500/VT500XL 1120 mm (44.1 in): PZ500ML
Overall height	1230 mm (48.4 in): PZ500/PZ500ML 1330 mm (52.4 in): VT500XL
Dry weight	211 kg (465 lb): PZ500 220 kg (485 lb): PZ500ML 244 kg (538 lb): VT500XL
Ski tread	1070 mm (42.1 in): PZ500/VT500XL 980 mm (38.6 in): PZ500ML

ESS75100

ENGINE

	PZ500/PZ500ML/VT500XL
Type	Axial fan cooled 2-stroke, 7-port
Cylinder arrangement	Parallel 2-cylinder
Displacement	485 cm ³
Bore × Stroke	72.0 × 59.6 mm (2.83 × 2.35 in)
Idle speed	1300 ± 100 r/min
Engine oil pype	YAMALUBE 2-cycle oil
Carburetor pype	MIKUNI, B38-32 × 2
Fuel	Unleaded gasoline Pump octane $\frac{R + M}{2}$; 88 or higher
Starting system	Manual with recoil starter: PZ500/PZ500ML Electric and manual with recoil starter: VT500XL

CHASSIS

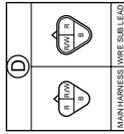
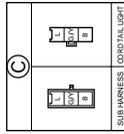
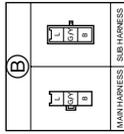
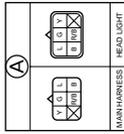
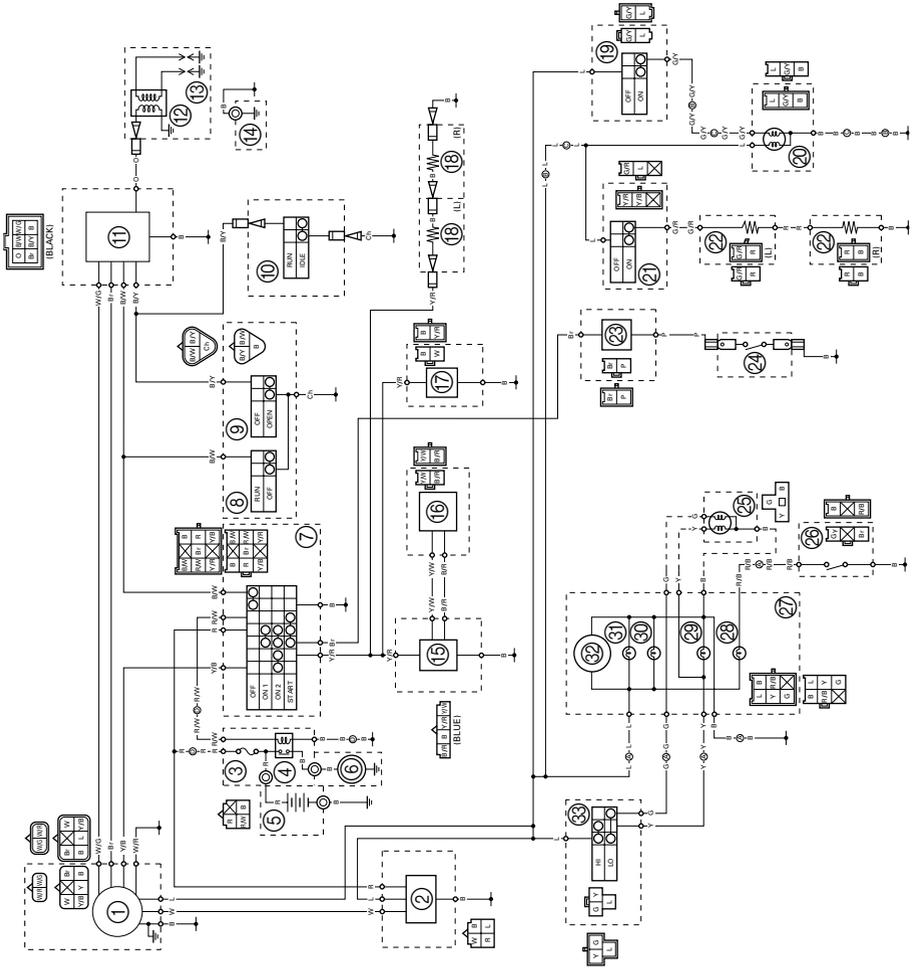
	PZ500/PZ500ML/VT500XL
Drive track and suspension: Track Width Track deflection Length on ground Suspension type Drive sprocket	Molded rubber, fiber glass rod reinforced 381 mm (15.0 in) 25 ~ 30 mm (0.98 ~ 1.18 in)/ 100 N {10 kg (22 lb)}: PZ500/VT500XL 20 ~ 25 mm (0.79 ~ 0.98 in)/ 100 N {10 kg (22 lb)}: PZ500ML 752 mm (29.6 in): PZ500 944 mm (37.2 in): PZ500ML/VT500XL Slide rail suspension Double polyethylene, 9 teeth: PZ500 Quadruple polyethylene, 8 teeth: PZ500ML/VT500XL
Transmission: Type Sheave distance Sheave offset Engagement speed* Shift speed* Drive chain Reduction ratio	Automatic centrifugal engagement, infinitely variable 3.8:1 ~ 1:1 Approx. 268.5 mm (10.57 in) Approx. 15 mm (0.59 in): PZ500/PZ500ML Approx. 20 mm (0.78 in): VT500XL Approx. 3800 r/min: PZ500 Approx. 4100 r/min: PZ500ML Approx. 3700 r/min: VT500XL Approx. 7250 r/min Silent chain enclosed in oil bath 39/21 (1.86): PZ500/VT500XL 39/18 (2.17): PZ500ML
Fuel tank: Tank capacity	44.3 L (9.7 Imp gal, 11.7 US gal)
Oil tank: Tank capacity	3.3 L (2.9 Imp qt, 3.5 US qt)
Brake: Type Operation	Hydraulic disc type Handle lever, left hand operated
Throttle: Operation	Handle lever, right hand operated

* Subject to change according to elevation settings.

ELECTRIC

		PZ500/PZ500ML/VT500XL
Ignition system		CDI
Spark plug	Type	BR9ES (NGK)
	Gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Battery	Capacity	YB16AL-A2/12 V 16A·h: VT500XL
	Maximum charge rate	1.6 Amperes/hr for 10 hrs: VT500XL
Headlight	Bulb × Quantity	12 V, 60/55 W × 1
Tail/brake light	Bulb × Quantity	12 V, 8/23 W × 1
Meter light	Bulb × Quantity	12 V, 1.7 W × 2
Indicator light	Bulb × Quantity	12 V, 3.4 W × 2

WIRING DIAGRAM



- ① CDI magneto
- ② Rectifier/regulator
- ③ Fuse (VT500XL)
- ④ Starter relay (VT500XL)
- ⑤ Battery (VT500XL)
- ⑥ Starter motor (VT500XL)
- ⑦ Main switch
- ⑧ Engine stop switch
- ⑨ Accel switch
- ⑩ Carburetor switch
- ⑪ CDI unit
- ⑫ Ignition coil
- ⑬ Spark plug
- ⑭ Ground
- ⑮ Voltage regulator
- ⑯ Variable resistor
- ⑰ Thumb warmer
- ⑱ Grip warmer
- ⑲ Brake light switch
- ⑳ Tail/brake light

- ㉑ Passenger warmer switch (VT500XL)
- ㉒ Passenger warmer (VT500XL)
- ㉓ DC back buzzer (VT500XL)
- ㉔ Gear position switch (VT500XL)
- ㉕ Headlight
- ㉖ Oil level switch
- ㉗ Meter assembly
- ㉘ Oil level light
- ㉙ High beam light
- ㉚ Speedometer light
- ㉛ Tachometer light
- ㉜ Tachometer
- ㉝ Headlight beam switch

COLOR CODE

B	Black
Br.....	Brown
Ch	Chocolate
G	Green
Gy	Gray
L	Blue
O	Orange
P	Pink
R.....	Red
W	White
Y	Yellow
B/R	Black/Red
B/W	Black/White
B/Y	Black/Yellow
G/R	Green/Red
G/Y	Green/Yellow
R/B	Red/Black
R/W	Red/White
W/G	White/Green
W/R	White/Red
Y/B	Yellow/Black
Y/R	Yellow/Red
Y/W	Yellow/White

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