

JETSKI
watercraft®

750SXi Pro



JET SKI® Watercraft Service Manual Supplement

Quick Reference Guide

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This quick reference guide will assist you in locating a desired topic or procedure.

- Bend the pages back to match the black tab of the desired chapter number with the black tab on the edge at each table of contents page.
- Refer to the sectional table of contents for the exact pages to locate the specific topic required.



JET SKI® Watercraft Service Manual Supplement

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No liability can be accepted for any inaccuracies or omissions in this publication, although every possible care has been taken to make it as complete and accurate as possible.

The right is reserved to make changes at any time without prior notice and without incurring an obligation to make such changes to products manufactured previously. See your "JET SKI" watercraft dealer for the latest information on product improvements incorporated after this publication.

All information contained in this publication is based on the latest product information available at the time of publication. Illustrations and photographs in this publication are intended for reference use only and may not depict actual model component parts.

LIST OF ABBREVIATIONS

A	ampere(s)	lb	pounds(s)
ABDC	after bottom dead center	m	meter(s)
AC	alternating current	min	minute(s)
ATDC	after top dead center	N	newton(s)
BBDC	before bottom dead center	Pa	pascal(s)
BDC	bottom dead center	PS	horsepower
BTDC	before top dead center	psi	pound(s) per square inch
°C	degree(s) Celsius	r	revolution
DC	direct current	rpm	revolution(s) per minute
F	farad(s)	TDC	top dead center
°F	degree(s) Fahrenheit	TIR	total indicator reading
ft	foot, feet	V	volt(s)
g	gram(s)	W	watt(s)
h	hour(s)	Ω	ohm(s)
L	liter(s)		

Read OWNER'S MANUAL before operating.

Foreword

This "JET SKI" 750SXi Pro watercraft Service Manual Supplement is designed to be used in conjunction with the "JET SKI" 750SX watercraft Service Manual (P/N 99924-1156-04). The maintenance and repair procedures described in this supplement are only those that are unique to the "JET SKI" 750SXi Pro watercraft. Most service operations for this model remain identical to those described in the base Service Manual. Complete and proper servicing of the "JET SKI" 750SXi Pro watercraft therefore requires both this supplement and the base Service Manual.

The base Service Manual and this Supplement are designed primary for use by "JET SKI" watercraft mechanics in a properly equipped shop. However, they contains enough detail and basic information to make them useful to the operator who desires to perform his own basic maintenance and repair work. a basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out maintenance and repair satisfactorily. Whenever the operator has insufficient experience or doubts his ability to do the work, all adjustments, maintenance, and repair should be carried out only by qualified mechanics.

In order to perform the work efficiently and to avoid costly mistakes, the mechanics should read the text, thoroughly familiarize himself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, makeshift tools or equipment should not be used. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation.

For the duration of the warranty period, especially, we recommend that all repairs and scheduled maintenance be performed in accordance with this service manual. Any owner maintenance or repair procedure not performed in accordance with this manual may void the warranty.

To get the longest life out of your "JET SKI" watercraft:

- Follow the Periodic Maintenance Chart in the Service Manual.
- Be alert for problems and non-scheduled maintenance.
- Use proper tools and genuine Kawasaki "JET SKI" watercraft parts. Special tools, gauges, and testers that are necessary when servicing Kawasaki "JET SKI" watercraft are introduced by the Special Tool Manual. Genuine parts provided as spare parts are listed in the Parts Catalog.
- Follow the procedures in this manual carefully. Don't take shortcuts.
- Remember to keep complete records of maintenance and repair with dates and any new parts installed.

How to Use this Manual

In preparing this manual, we divided the product into its major systems. These systems became the manual's chapters. All information for a particular system from adjustment through disassembly and inspection is located in a single chapter.

The Quick Reference Guide shows you all of the product's system and assists in locating their chapters. Each chapter in turn has its own comprehensive Table of Contents.

The Periodic Maintenance Chart is located in the General Information chapter. The chart gives a time schedule for required maintenance operations.

If you want spark plug information, for example, go to the Periodic Maintenance Chart first. The chart tells you how frequently to clean and gap the plug. Next, use the Quick Reference Guide to locate the Electrical System chapter. Then, use the Table of Contents on the first page of the chapter to find the Spark Plug section.

Whenever you see these WARNING and CAUTION symbols, heed their instructions! Always follow safe operating and maintenance practices.

WARNING

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

This manual contains four more symbols (in addition to WARNING and CAUTION) which will help you distinguish different types of information.

NOTE

○ *This note symbol indicates points of particular interest for more efficient and convenient operation.*

- Indicates a procedural step or work to be done.
- Indicates a procedural sub-step or how to do the work of the procedural step it follows. It also precedes the text of a NOTE.
- ★ Indicates a conditional step or what action to take based on the results of the test or inspection in the procedural step or sub-step it follows.

In most chapters an exploded view illustration of the system components follows the Table of Contents. In these illustrations you will find the instructions indicating which parts require specified tightening torque, oil, grease or a locking agent during assembly.

General Information

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1-2 GENERAL INFORMATION

Before Servicing

Before starting to service a watercraft, careful reading of the applicable section is recommended to eliminate unnecessary work. Photographs, diagrams, notes, cautions, warnings, and detailed descriptions have been included wherever necessary. Nevertheless, even a detailed account has limitations, a certain amount of basic knowledge is also required for successful work.

Especially note the following:

(1) Adjustments

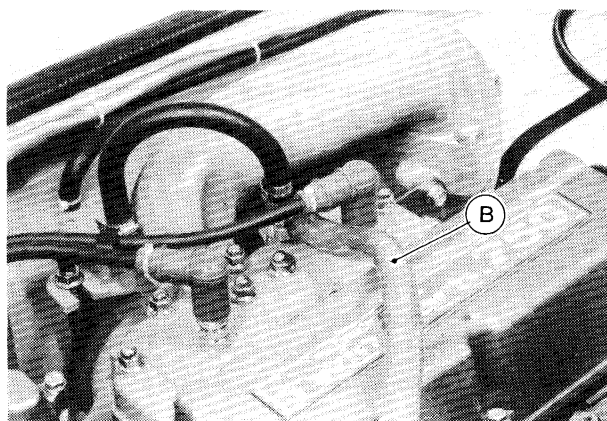
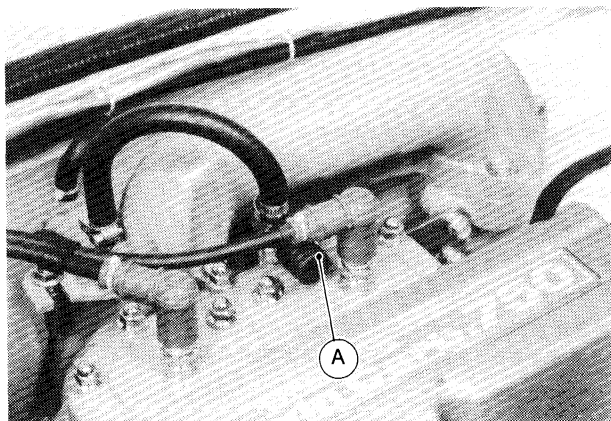
Adjustments shall be made in accordance with the Periodic Maintenance Chart or whenever troubleshooting or presence of symptoms indicate that adjustments may be required. Whenever running of the engine is required during maintenance it is best to have the watercraft in water.

CAUTION

Do not run the engine without cooling water supply for more than 15 seconds or severe engine and exhaust system damage will occur.

(2) Auxiliary Cooling

An auxiliary cooling supply may be used if the watercraft cannot be operated in water during adjustments. If possible, always operate the watercraft in water rather than use an auxiliary cooling supply.



- Loosen the clamp and remove the cap [A].
- Connect the garden hose [B] to the hose fitting (see above).
- Attach the garden hose to a faucet. Do not turn on the water until the engine is running and turn it off immediately when the engine stops. The engine requires 2.4 L/min (2.5 qts/min) at 1800 rpm and 7.0 L/min (7.4 qts/min) at 6000 rpm.

CAUTION

Insufficient cooling supply will cause the engine and/or exhaust system to overheat and severe damage will occur. Excessive cooling supply may kill the engine and flood the cylinder, causing hydraulic lock. Hydraulic lock will cause severe damage to the engine. If the engine dies while using an auxiliary cooling supply, the water must be shut off immediately.

Always turn the boat on its right side. Rolling to the left side can cause water in the exhaust system to run into the engine, with possible engine damage.

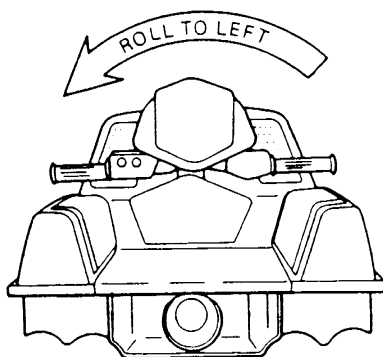
(3) Dirt

Before removal and disassembly, clean the "Jet Ski" watercraft. Any sand entering the engine, carburetor, or other parts will work as an abrasive and shorten the life of the watercraft. For the same reason, before installing a new part, clean off any dust or metal filings.

(4) Battery Ground

Remove the ground (–) lead from the battery before performing any disassembly operations on the watercraft. This prevents:

- (a) the possibility of accidentally turning the engine over while partially disassembled.
- (b) sparks at electrical connections which will occur when they are disconnected.
- (c) damage to electrical parts.



(5) Tightening Sequence

Generally, when installing a part with several bolts, nuts, or screws, they should all be started in their holes and tightened to snug fit. Then tighten them evenly in a cross pattern. This is to avoid distortion of the part and/or causing gas or oil leakage. Conversely when loosening the bolts, nuts, or screws, first loosen all of them by about a quarter of turn and then remove them.

Where there is a tightening sequence indication in this Service Manual, the bolts, nuts, or screws must be tightened in the order and method indicated.

(6) Torque

The torque values given in this Service Manual should always be adhered to. Either too little or too much torque may lead to serious damage. Use a good quality, reliable torque wrench.

(7) Force

Common sense should dictate how much force is necessary in assembly and disassembly. If a part seems especially difficult to remove or install, stop and examine what may be causing the problem. Whenever tapping is necessary, tap lightly using a wooden or plastic faced mallet. Use an impact driver for screws (particularly for the removal of screws held by a locking agent) in order to avoid damaging the screw heads.

(8) Edges

Watch for sharp edges, especially during major engine disassembly and assembly. Protect your hands with gloves or a piece of thick cloth when lifting the engine or turning it over.

(9) High Flash-Point Solvent

A high flash-point solvent is recommended to reduce fire danger. A commercial solvent commonly available in North America is Stoddard solvent (generic name). Always follow manufacturer and container directions regarding the use of any solvent.

(10) Gasket, O-Ring

Do not reuse a gasket or O-ring once it has been in service. The mating surfaces around the gasket should be free of foreign matter and perfectly smooth to avoid oil or compression leaks.

(11) Liquid Gasket, Non-Permanent Locking Agent

Follow manufacturer's directions for cleaning and preparing surfaces where these compounds will be used. Apply sparingly. Excessive amounts may block engine cooling passages and cause serious damage. An example of a non-permanent locking agent commonly available in North America is Loctite Lock N' Seal (Blue).

(12) Press

A part installed using a press or driver, such as a seal, should first be coated with oil on its outer or inner circumference so that it will go into place smoothly.

(13) Ball Bearing

When installing a ball bearing, the bearing race which is affected by friction should be pushed by a suitable driver. This prevents severe stress on the balls and races, and prevents races and balls from being dented. Press a ball bearing until it stops at the stop in the hole or on the shaft.

(14) Oil Seal and Grease Seal

Replace any oil or grease seals that were removed with new ones, as removal generally damages seals.

1-4 GENERAL INFORMATION

When pressing in a seal which has manufacturer's marks, press it in with the marks facing out. Seals should be pressed into place using a suitable driver, which contacts evenly with the side of seal, until the face of the seal is even with the end of the hole.

(15) Seal Guide

A seal guide is required for certain oil or grease seals during installation to avoid damage to the seal lips. Before a shaft passes through a seal, apply a little lubricant, preferably high temperature grease on the lips to reduce rubber to metal friction.

(16) Circlip, Retaining Ring

Replace any circlips and retaining rings that were removed with new ones, as removal weakens and deforms them. When installing circlips and retaining rings, take care to compress or expand them only enough to install them and no more.

(17) Cotter Pin

Replace any cotter pins that were removed with new ones, as removal deforms and breaks them.

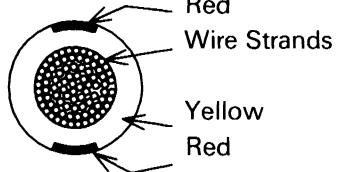
(18) Lubrication

Engine wear is generally at its maximum while the engine is warming up and before all the rubbing surfaces have an adequate lubricative film. During assembly, oil or grease (whichever is more suitable) should be applied to any rubbing surface which has lost its lubricative film. Old grease and dirty oil should be cleaned off. Deteriorated grease has lost its lubricative quality and may contain abrasive foreign particles.

Don't use just any oil or grease. Some oils and greases in particular should be used only in certain applications and may be harmful if used in an application for which they are not intended.

(19) Electrical Wires

All the electrical wires are either single-color or two-color and, with only a few exceptions, must be connected to wires of the same color. On any of the two-color wires there is a greater amount of one color and a lesser amount of a second color, so a two-color wire is identified by first the primary color and then the secondary color. For example, a yellow wire with thin red stripes is referred to as a "yellow/red" wire; it would be a "red/yellow" wire if the colors were reversed to make red the main color.

Wire (cross-section)	Name of Wire Color
	Yellow/Red

(20) Replacement Parts

When there is a replacement instruction, replace these parts with new ones every time they are removed. These replacement parts will be damaged or lose their original function once removed.

(21) Inspection

When parts have been disassembled, visually inspect these parts for the following conditions or other damage. If there is any doubt as to the condition of them, replace them with new ones.

Abrasion	Crack	Hardening	Warp
Bent	Dent	Scratch	Wear
Color change	Deterioration	Seizure	

(22) Service Data

Numbers of service data in this text have following meanings:

"Standards": Show dimensions or performances which brand-new parts or systems have.

"Service Limits": Indicate the usable limits. If the measurement shows excessive wear or deteriorated performance, replace the damaged parts.

Model Identification

JS750-C1 Left Side View:



JS750-C1 Right Side View:



1-6 GENERAL INFORMATION

General Specifications

Items	JS750-C1
Engine: Type Displacement Bore and stroke Compression ratio *Maximum horsepower *Maximum torque Ignition system Lubrication system Carburetion system Starting system	2-stroke, vertical twin, crankcase reed valve, water cooled 743 mL 80.0 × 74.0 mm 7.0 : 1 53 kW (72 PS) @6 500 r/min (rpm) 85.3 N·m (8.7 kg·m, 62.9 ft·lb) @5 750 r/min (rpm) Magnetron CDI (Digital) Gas/Oil Premix ratio 60 : 1 Mikuni BN40-38 x 2 diaphragm type (38 mm venturi) Electric starter
Tuning Specifications: Spark plug: Type Gap Terminal Ignition timing Carburetor : Idle speed Compression pressure	NGK BR8ES 0.7 ~ 0.8 mm Solid Post 13° BTDC @1 250 r/min (rpm) ~ 20.2° BTDC @4 000 r/min (rpm) 1 250 ±100 r/min (rpm) – in water 1 700 ±100 r/min (rpm) – out of water 863~ 1 333 kPa (8.8 ~ 13.6 kg/cm ² , 125 ~ 193 psi)
Drive System: Coupling Jet pump: Type Thrust Steering Braking	Direct drive from engine Axial flow, single stage 2 790 N (285 kg, 628 lb) Steerable nozzle Water drag
Performance: †Minimum turning radius †Fuel consumption †Cruising range	2.9 m 31 L/h @ full throttle 42 km @ full throttle 33 minutes
Dimensions: Overall length Overall width Overall height Dry weight Fuel tank capacity	2 210 mm 700 mm 680 mm 155 kg 15 L including 2.3 L reserve
Engine Oil: Type Oil tank capacity	2-stroke, NMMA Certified for Service TC-W3 ---
Electrical Equipment: Battery Maximum generator out put	12 V 18 Ah 6.6 A/14 V @6 000 r/min (rpm)

† : This information shown here represents results under controlled conditions, and the information may not be correct under other conditions.

* : Continuous output

Specification subject to change without notice, and may not apply to every country.

Periodic Maintenance Chart

NOTE

○ Complete the Pre-Ride Checklist before each outing.

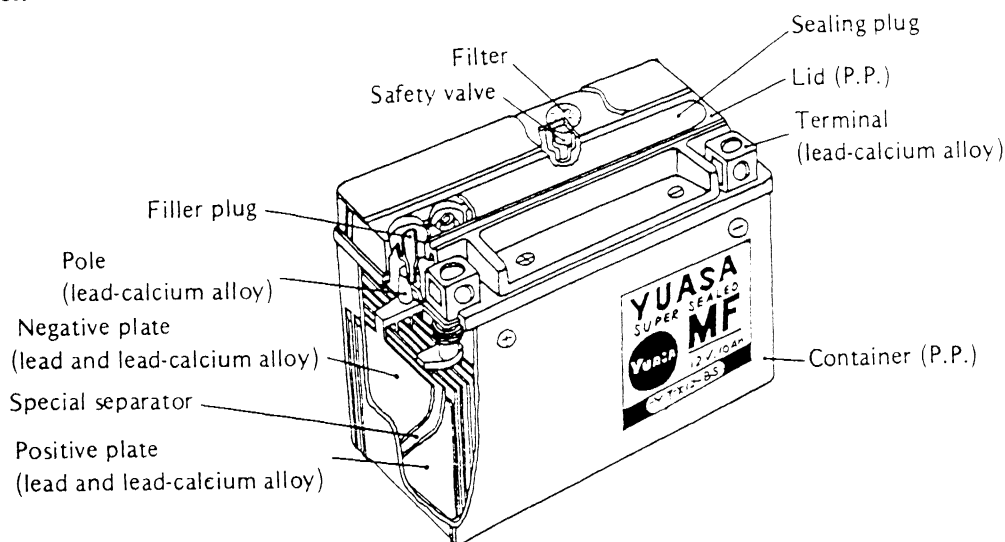
Frequency Description	Initial 10 Hours	Every 25 Hours	Every 100 Hours
Check all hose clamps, nuts, bolts, and fasteners	●	●	
Torque cylinder head nuts	●	●	
Lubricate throttle cable fitting and choke cable fitting at carburetor		●	
Lubricate choke cable and throttle case and cable		●	
Clean and gap spark plugs (replace if necessary)		●	
Lubricate steering nozzle pivots		●	
Lubricate steering cable ball joints		●	
Clean fuel filter screens		●	
Lubricate handlebar pivot		●	
Adjust carburetor		●	
Flush bilge line and filter		●	
Flush cooling system (after each use in salt water)		●	
Inspect/clean flame arrester		●	
Inspect impeller blade for damage (remove)			●
Inspect/replace coupling damper			●
Inspect carburetor throttle shaft spring (replace carburetor if necessary)			●
Inspect steering cable			●

1-8 GENERAL INFORMATION

Technical Information – Maintenance Free Battery

A maintenance free battery is installed in this model. The maintenance free battery is a sealed type, and so cannot be performed the electrolyte level check and topping-up.

(I) Construction

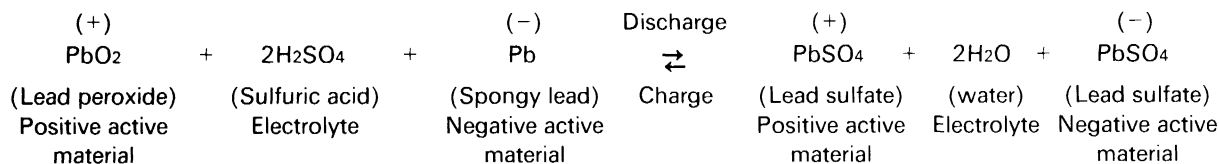


(II) Main Features

- 1) Maintenance free..... It is not necessary to check the electrolyte level and top-up the electrolyte.
- 2) No electrolyte leakage..... As the electrolyte is retained firmly in the special separators, there is no free electrolyte in the battery.
- 3) Instant activation system..... It can be used instantly after filling only the electrolyte without initial charge.
- 4) One-push motion electrolyte filling..... It is possible to fill the electrolyte by easy one-push motion.
- 5) Safety construction..... If the battery internal pressure rises abnormally high, the safety valve opens to release the gas inside the battery to restore the normal pressure and prevent the battery from rupturing. After restoring the normal pressure, the safety valve closes and the battery is sealed again. Moreover, a ceramic filter is disposed on top of the safety valve under the lid to remove risk of ignition or explosion caused by fire from outside.
- 6) Compact and high performance..... No presence of free electrolyte allows the battery made lower in height, thus resulting in enhanced volume efficiency. Moreover, gas being absorbed inside the battery eliminates the need for a gas exhaust tube.
- 7) Strong charge/discharge characteristics It can amply withstand deep charge/discharge cycles.

(III) Principle of Sealing Structure

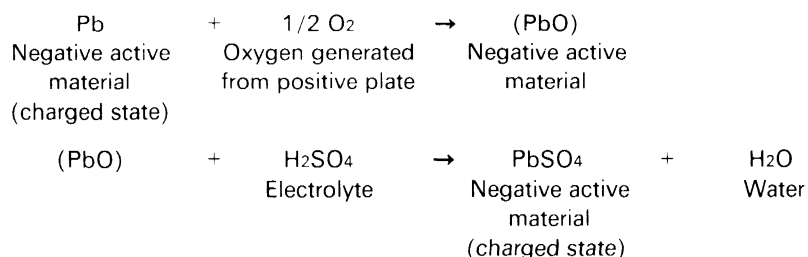
A lead-acid battery operates under the following chemical reaction:



Normally in an ordinary lead-acid battery when it comes to an end of a charge, where the lead sulfate being a discharge product returns to lead peroxide and spongy lead, the charge current flowing thereafter is used exclusively to decompose electrolytically water from the electrolyte, thus resulting in generation of hydrogen gas from the negative plate and oxygen gas from the positive plate. The gases so generated are released out of the battery, causing the amount of electrolyte decreased to require occasional water replenishment.

A maintenance free battery, however, is so designed that, when it is overcharged, even if the positive plate is fully charged, the negative plate remains not fully turned to spongy lead. Therefore, even when the positive plate is overcharged generating oxygen gas, the negative plate is no fully charged, hence generating no hydrogen gas.

Moreover, the oxygen gas generated from the positive plate immediately reacts with the charged active material on the negative plate, and returns to water, with the ultimate result of no water loss.



Thus, the negative plate is made as not to get fully charged. Even if the overcharge continues, the oxygen gas generated inside the battery is absorbed by the negative plate, a process called oxygen cycle, which keeps water loss theoretically at nil, and allows the battery to be sealed.

(IV) Filling the Battery with Electrolyte

CAUTION

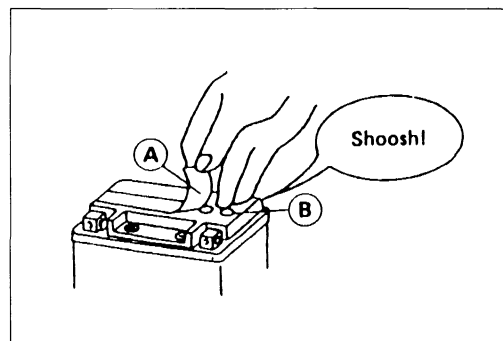
Do not remove the aluminum seal sheet sealing the filler ports until just before use.

Be sure to use the dedicated electrolyte container for correct electrolyte volume.

- Check to see that there is no peeling, tears or holes in the sealing sheet.
- Place the battery on a level surface.
- Remove the sealing sheet [A].
- When removing, check to hear an air-sucking sound "Shoosh!" from filler ports [B].

NOTE

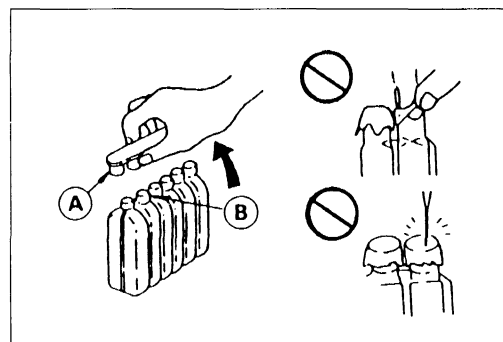
- A battery whose sealing sheet has any peeling, tears, holes, or from which the air-sucking sound was not heard requires a refreshing charge (initial charge).



- Take the electrolyte container out of the vinyl bag.
- Detach the strip of caps [A] from the container.

NOTE

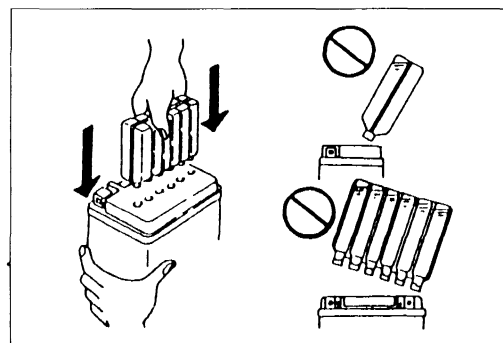
- Do not discard the strip of caps because it is used as the battery plugs later.
- Do not peel back or pierce the sealed areas [B].



- Place the electrolyte container upside down with the six sealed areas in line with the six battery filler ports.
- Push the container down strongly enough to break the seals. Now the electrolyte should start to flow into the battery.

NOTE

- Do not tilt the container as the electrolyte flow may be interrupted.



1-10 GENERAL INFORMATION

- Make sure air bubbles [A] are coming up from all six filler ports.
- Leave the container this way for 5 minutes or longer.

NOTE

○ If no air bubbles are coming up from a filler port, tap the bottom of the bottle two or three times. Never remove the container from the battery.

CAUTION

Fill until the container is completely emptied.

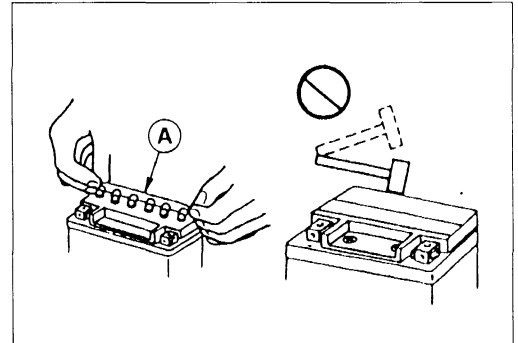
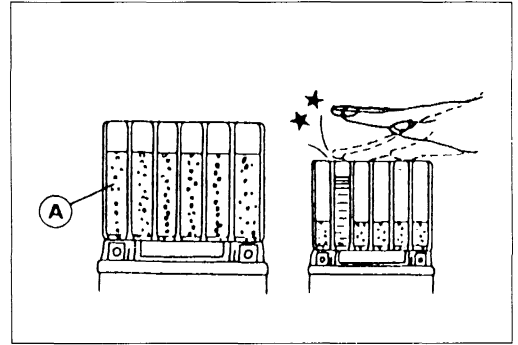
- Be certain that all the electrolyte has flowed out.
- Tap the bottom the same way as above if there is any electrolyte left in the container.
- Now pull the container gently out of the battery.
- Let the battery sit for **20** minutes. During this time, the electrolyte permeates the special separators and the gas generated by chemical reaction is released.
- Fit the strip of caps [A] tightly into the filler ports until the strip is at the same level as the top of the battery.

NOTE

○ Do not hammer. Press down evenly with both hands.

CAUTION

Once you installed the strip of caps after filling the battery, never remove it, nor add any water or electrolyte.



(V) Initial Charge

While a maintenance free battery can be used after only filling with electrolyte, a battery may not be able to sufficiently move a starter motor to start an engine in the cases shown in the table below, where an initial charge is required before use. However, if a battery shows a terminal voltage of higher than 12.5 V after 10 minutes of filling (Note 1), no initial charge is necessary.

Condition requiring initial charge	Charging method
At low temperatures (lower than 0°C)	1.2 A × 2 ~ 3 hours
Battery has been stored in high temperature and humidity.	1.2 A × 15 ~ 20 hours
Seal has been removed, or broken – peeling, tear or hole. (If you did not hear the air-sucking sound “Shoosh!” as you removed the seal.)	
Battery as old as 2 years or more after manufacture. Battery manufacturing date is printed on battery top. Example) <u>12</u> <u>10</u> <u>93</u> <u>T1</u> Day Month Year Mfg. location	

Note 1 : Terminal voltage – To measure battery terminal voltage, use a digital voltmeter.

(VI) Precautions

1) No need of topping-up

No topping-up is necessary in this battery until it ends its life under normal use. Forcibly prying off the sealing plug to add water is very dangerous. Never do that.

2) Refreshing charge

If an engine will not start, it indicates the battery has been discharged. Give refresh charge for 5 to 10 hours with charge current shown in the specification (see the Electrical System chapter).

When a fast charge is inevitably required, do it following precisely the maximum charge current and time conditions indicated on the battery.

CAUTION

This battery is designed to sustain no unusual deterioration if refresh-charged according to the method specified above. However, the battery's performance may be reduced noticeably if charged under conditions other than given above.

Never remove the sealing plug during refresh charge.

If by chance an excessive amount of gas is generated due to overcharging, the safety valve operates to keep the battery safe.

3) When you do not use the watercraft for months

Give a refresh charge before you store the watercraft and store it with the negative lead removed. Give a refresh charge every six months during storage.

4) Battery life

If the battery will not start the engine even after several refresh charges, the battery has exceeded its useful life. Replace it. (Provided, however, the vehicle's starting system has no problem.)

⚠ WARNING

Keep the battery away from sparks and open flames during charging, since the battery gives off an explosive gas mixture of hydrogen and oxygen. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.

No fire should be drawn near the battery, or no terminals should have the tightening loosened.

The electrolyte contains sulfuric acid. Be careful not to have it touch your skin or eyes. If touched, wash it off with liberal amount of water. Get medical attention if severe.

(VII) Interchangeability with Ordinary Battery

A maintenance free battery can fully display its performance only when combined with a proper vehicle electric system. Therefore, replace a maintenance free battery only on a motorcycle which was originally equipped with a maintenance free battery.

Be careful, if a maintenance free battery is installed on a motorcycle which had an ordinary battery as original equipment, the maintenance free battery's life will be shortened.

1-12 GENERAL INFORMATION

Torque and Locking Agent

The following tables list the tightening torque for the major fasteners requiring use of a non-permanent locking agent or silicone sealant.

Letters used in the "Remarks" column mean:

L : Apply a non-permanent locking agent to the threads.

SS : Apply silicone sealant to the threads.

S : Tighten the fasteners following the specified sequence.

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Fuel System:				
Carburetor Mounting Bolts	7.8	0.8	69 in-lb	L
Intake Manifold Mounting Nuts	9.8	1.0	87 in-lb	
Air Intake Cover Bolts	7.8	0.8	69 in-lb	L
Arrester Case Mounting Bolts	7.8	0.8	69 in-lb	L
Fuel Tap Mounting Screws	–	–	–	L
Choke Assembly Mounting Screws	–	–	–	L
Exhaust System:				
Exhaust Pipe Mounting Bolts	29	3.0	22	L
Front Muffler Mounting Bolts	29	3.0	22	L
Water Pipe Joints	9.8	1.0	87 in-lb	SS
Exhaust Manifold Mounting Nuts	20	2.0	14.5	S
Expansion Chamber Mounting Bolts	29	3.0	22	L
Muffler Bracket Mounting Bolts	20	2.0	14.5	L
Water Box Muffler Bracket Mounting Bolts	–	–	–	L
Engine Top End:				
Cylinder Head Nuts	29	3.0	22	S
Water Pipe Joint	9.8	1.0	87 in-lb	SS
Cylinder Base Nuts	34	3.5	25	
Engine Removal/Installation:				
Engine Mounting Bolts	49	5.0	36	
Engine Bed Mounting Bolts	36	3.7	27	L
Engine Mount Bolts	16	1.6	11.6	
Engine Bottom End:				
Flywheel Bolt	125	13.0	94	L
Stator Mounting Bolts	12	1.2	8.5	
Coupling	98	10.0	72	SS
Magneto Cover Mounting Bolts	7.8	0.8	69 in-lb	L
Crankcase Bolts (6 mm Dia.)	7.8	0.8	69 in-lb	L, S
Crankcase Bolts (8 mm Dia.)	29	3.0	22	L, S
Water Drain Valve Mounting Bolts	7.8	0.8	69 in-lb	L
Water Drain Valve Cover Bolts	7.8	0.8	69 in-lb	L
Magneto Cover Stud	–	–	–	L
Cooling and Bilge Systems:				
Water Pipe Joint	9.8	1.0	87 in-lb	SS
Drive System:				
Coupling Cover Nuts	–	–	–	L
Coupling	39	4.0	29	SS
Drive Shaft Holder Mounting Bolts	22	2.2	16.0	L

Fastener	Torque			Remarks
	N-m	kg-m	ft-lb	
Pump and Impeller:				
Water Pipe Joint	9.8	1.0	87 in-lb	SS
Steering Nozzle Pivot Bolts	9.8	1.0	87 in-lb	L
Pump Outlet Mounting Bolts	—	—	—	L
Pump Cap Bolts	—	—	—	L
Impeller	98	10.0	72	
Pump Mounting Bolts	22	2.2	16.0	L
Pump Cover Mounting Bolts	6.9	0.7	61 in-lb	L
Grate Mounting Bolts	9.8	1.0	87 in-lb	L
Handle Pole and Handlebar:				
Steering Support Bracket Mounting Bolts	—	—	—	L
Steering Pivot Stud	38	3.9	28	
Handle Pole Pivot Shaft	13	1.3	9.5	L
Handle Pole Pivot Shaft Nut	33	3.4	25	L
Handlebar Clamp Bolts	18	1.8	13.0	
Handle Pole Bracket Bolts	19	1.9	13.5	
Hull/Engine Hood:				
Bumper Bushings	—	—	—	L
Bumper Mounting Nuts	—	—	—	L
Mat Guard Mounting Nuts	—	—	—	L
Electrical System:				
Electric Case Bolts	7.8	0.8	69 in-lb	L
Electric Case Mounting Bolts	7.8	0.8	69 in-lb	L
Regulator/Rectifier Mounting Bolts	7.8	0.8	69 in-lb	L
CDI Igniter Mounting Bolts	7.8	0.8	69 in-lb	L
Spark Plugs	27	2.8	20	
Starter Motor Mounting Bolts	7.8	0.8	69 in-lb	L
Ignition Coil Mounting Bolts	7.8	0.8	69 in-lb	L
Temperature Sensor Mounting Bolts	7.8	0.8	69 in-lb	L
Starter Relay Mounting Nuts	3.9	0.4	35 in-lb	
Starter Lead Mounting Nut	7.8	0.8	69 in-lb	
Battery Ground Lead Mounting Bolt	7.8	0.8	69 in-lb	L
Flywheel Bolt	125	13.0	94	L
Stator Mounting Bolts	7.8	0.8	69 in-lb	
Temperature Sensor	2.9	0.3	26 in-lb	

This table relating tightening torque of the stainless bolt and the nut to thread diameter, lists the basic torque for the bolts and nuts. Use this table for only the bolts and nuts which do not require a specific torque value.

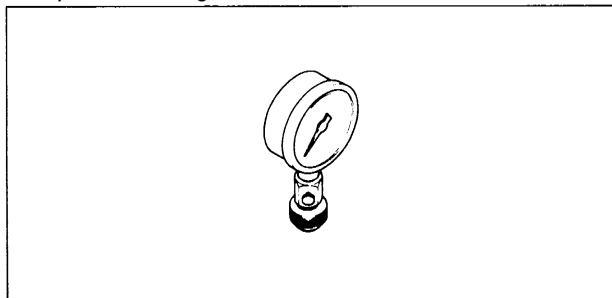
General Fasteners (stainless bolt and nut)

Threads dia. (mm)	Torque		
	N-m	kg-m	ft-lb
6	5.9~8.8	0.60~0.90	52~78 in-lb
8	16~22	1.6~2.2	11.6~15.9
10	30~41	3.1~4.2	22~30

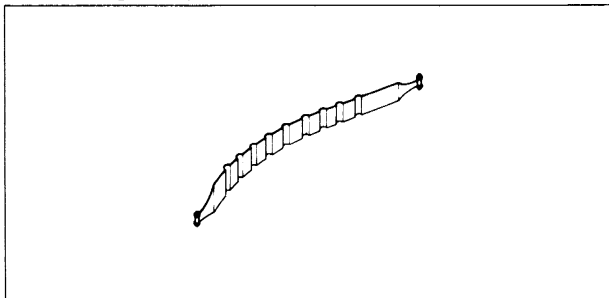
1-14 GENERAL INFORMATION

Special Tools, Sealant

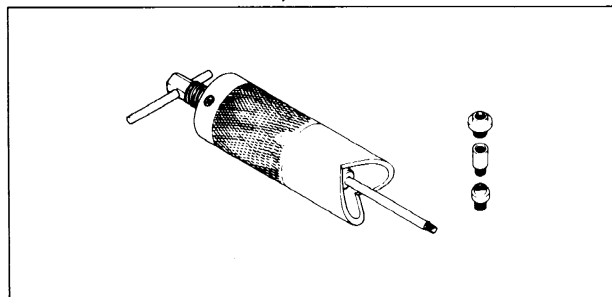
Compression Gauge: 57001-221



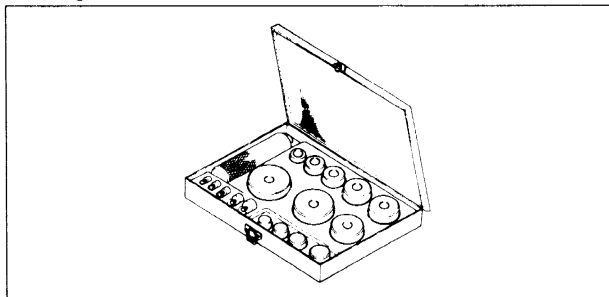
Piston Ring Compressor Belt, $\phi 67 \sim \phi 79$: 57001-1097



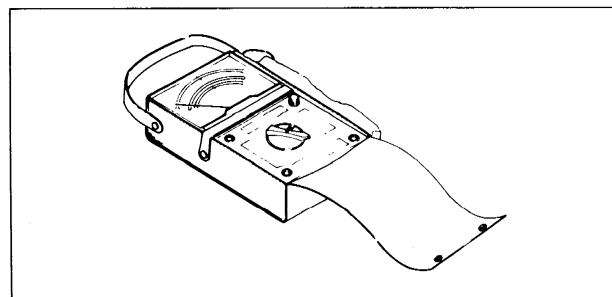
Piston Pin Puller Assembly: 57001-910



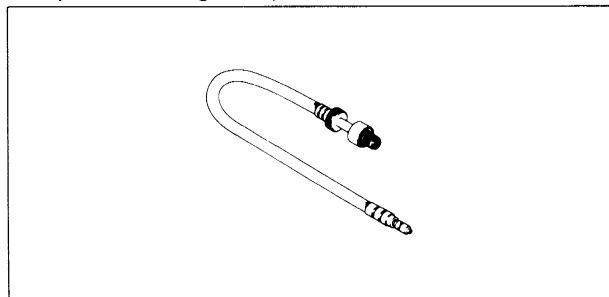
Bearing Driver Set: 57001-1129



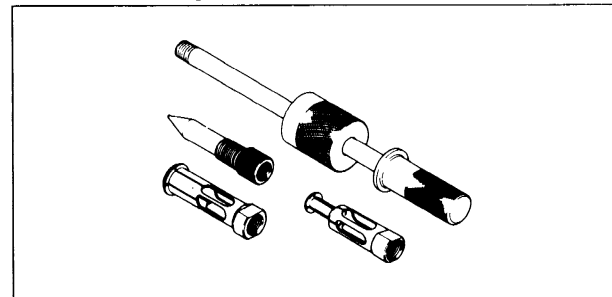
Hand Tester: 57001-1394



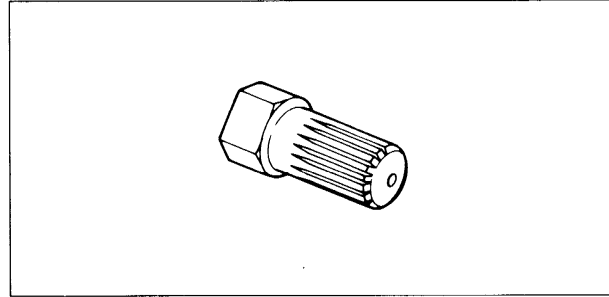
Compression Gauge Adapter, M14 x 1.25: 57001-1159



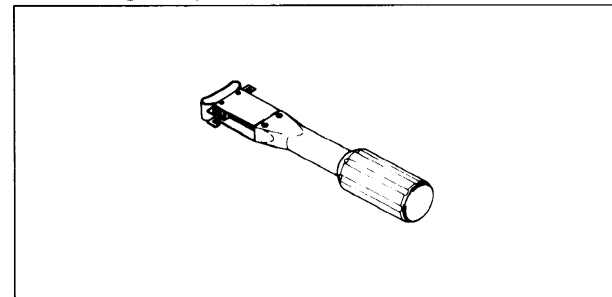
Oil Seal & Bearing Remover: 57001-1058



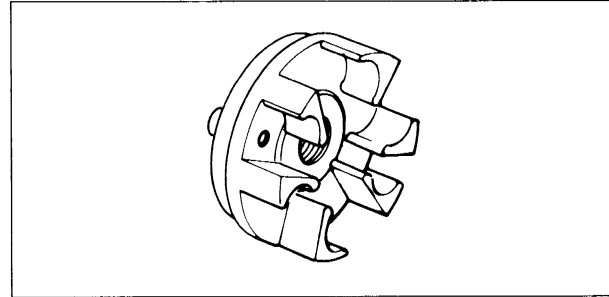
Impeller Wrench: 57001-1228



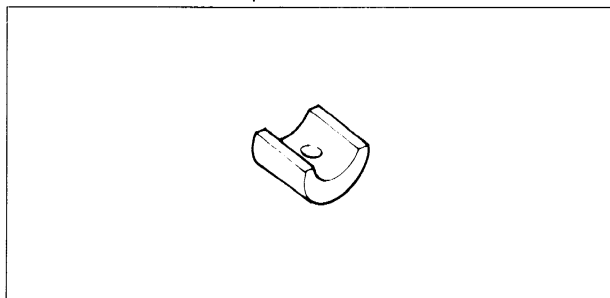
Piston Ring Compressor Grip: 57001-1095



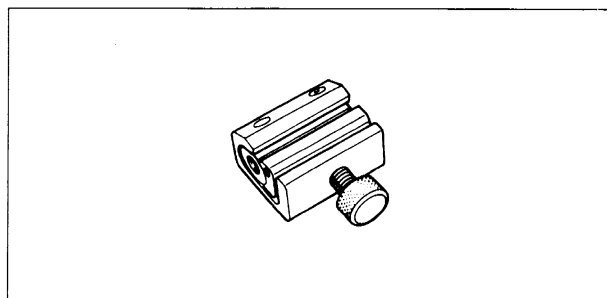
Coupling Holder: 57001-1230



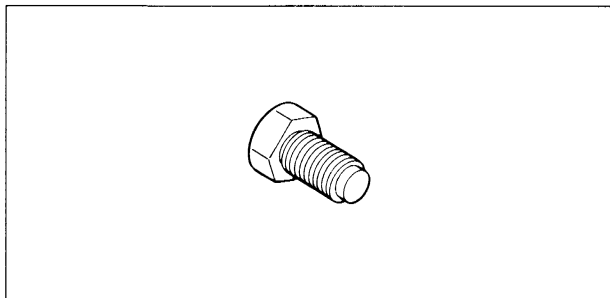
Drive Shaft Holder Adapter: 57001-1231



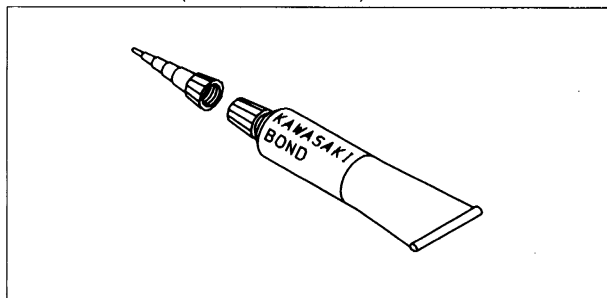
Pressure Cable Luber: k56019-021



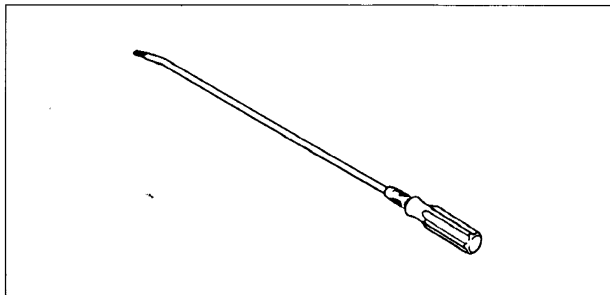
Rotor Puller, M18 x 1.5: 57001-1258



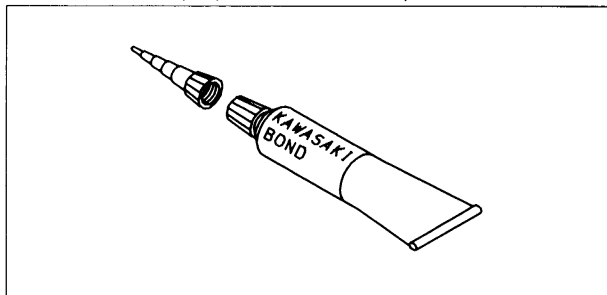
Kawasaki Bond (Silicone Sealant): 56019-120



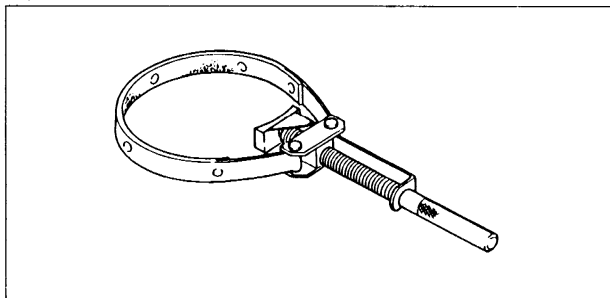
Watercraft Strap Tool: 57001-1294



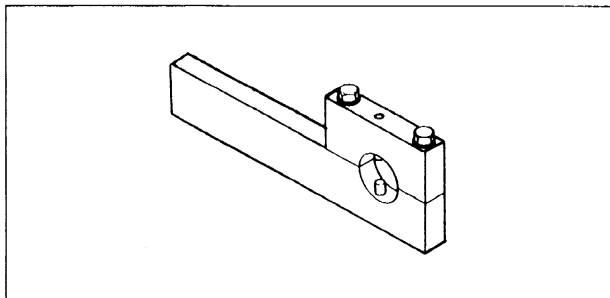
Kawasaki Bond (Liquid Gasket-Black): 92104-1003



Flywheel Holder: 57001-1313



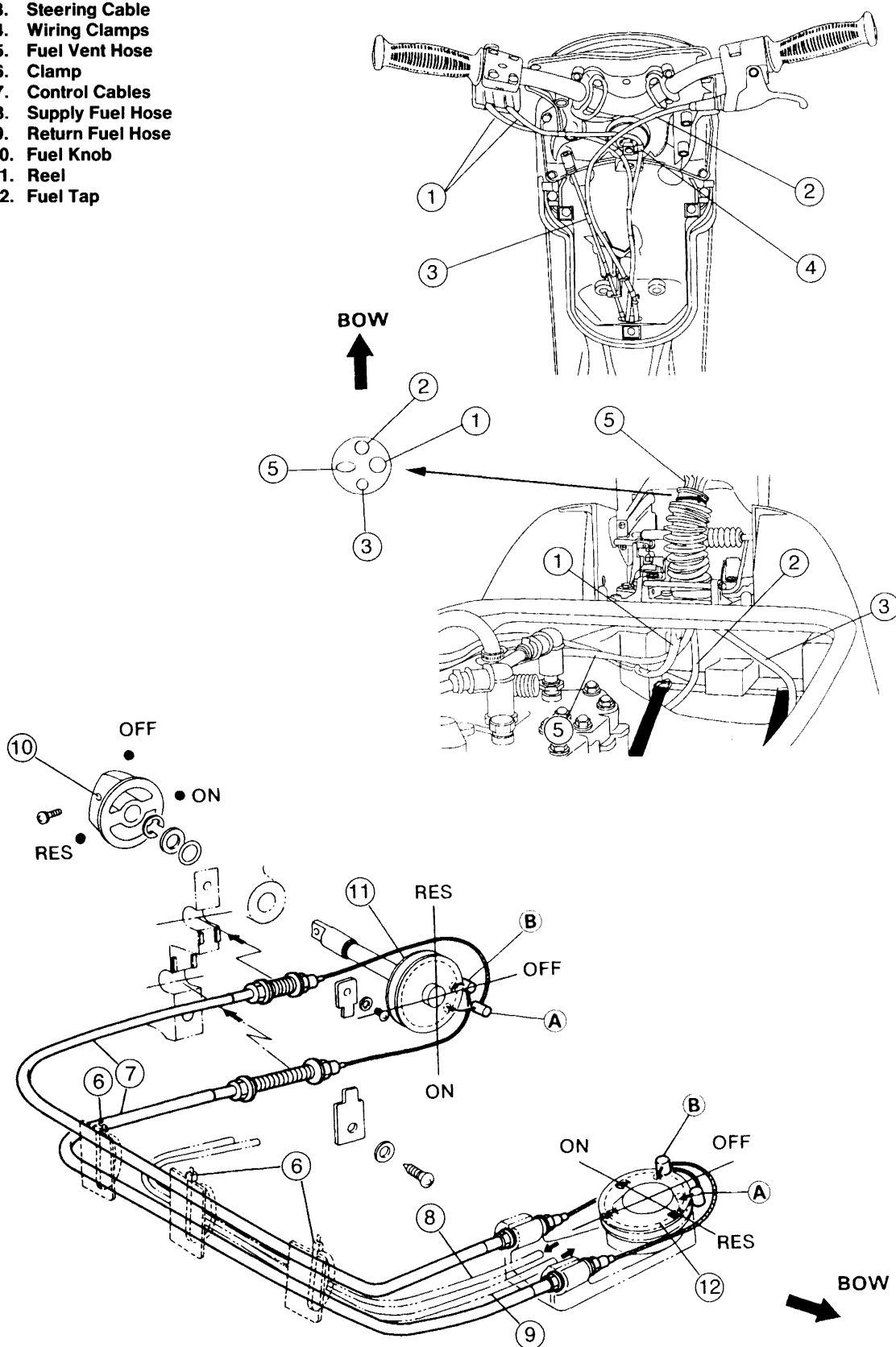
Drive Shaft Holder: 57001-1327

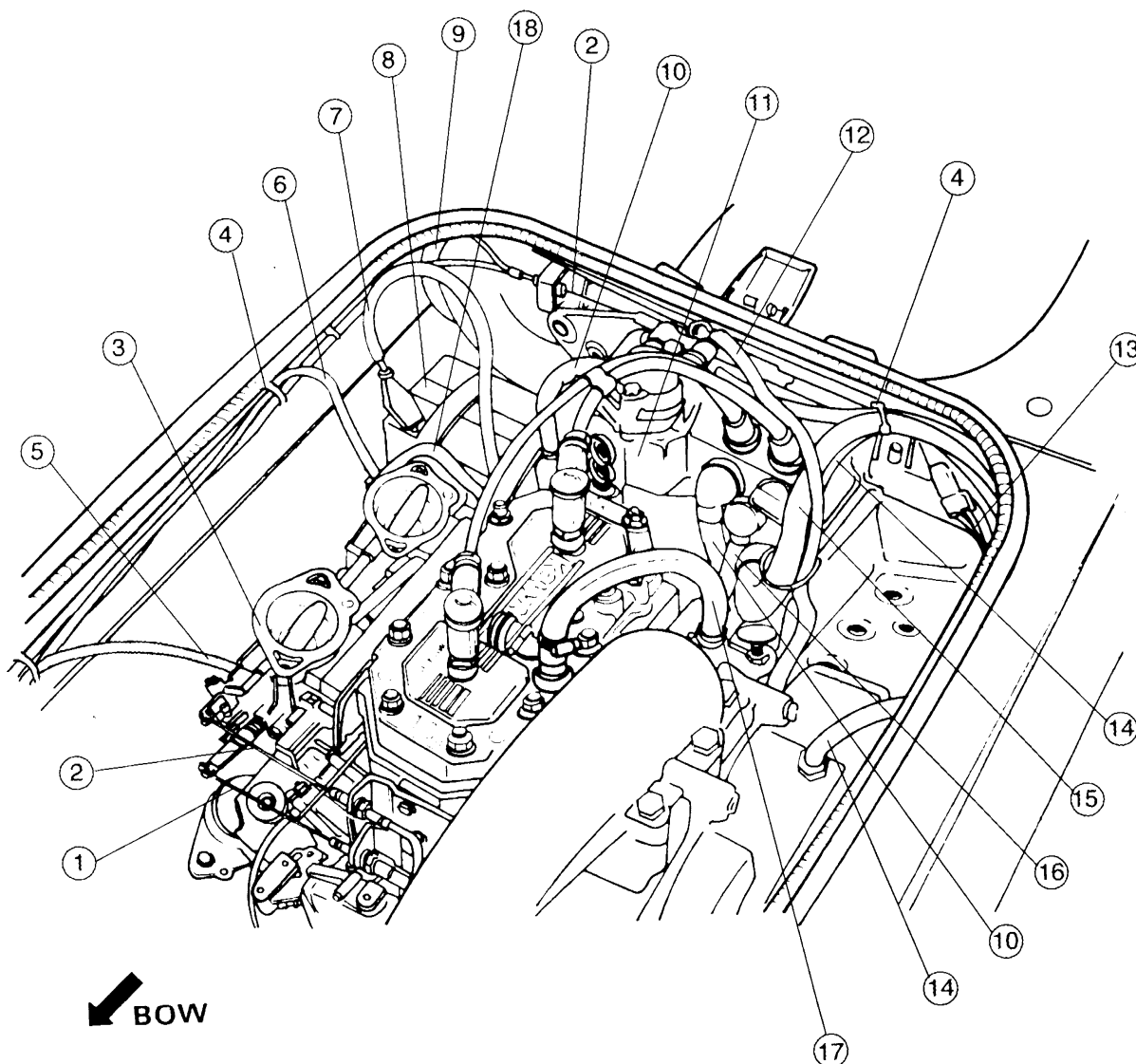


1-16 GENERAL INFORMATION

Cable, Wire and Hose Routing

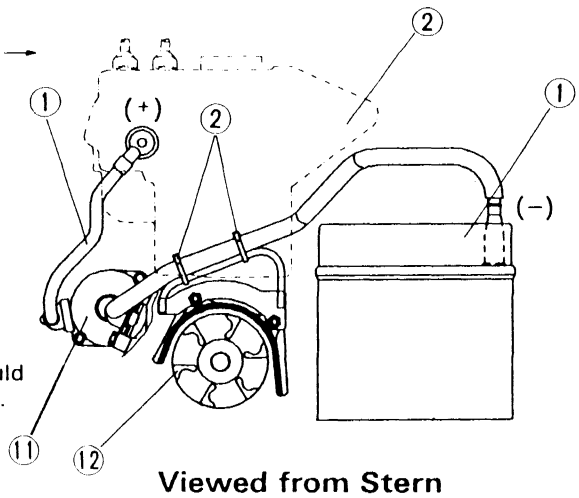
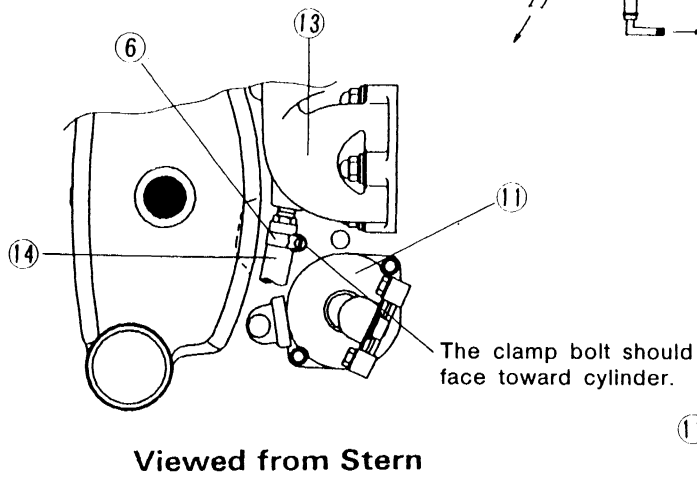
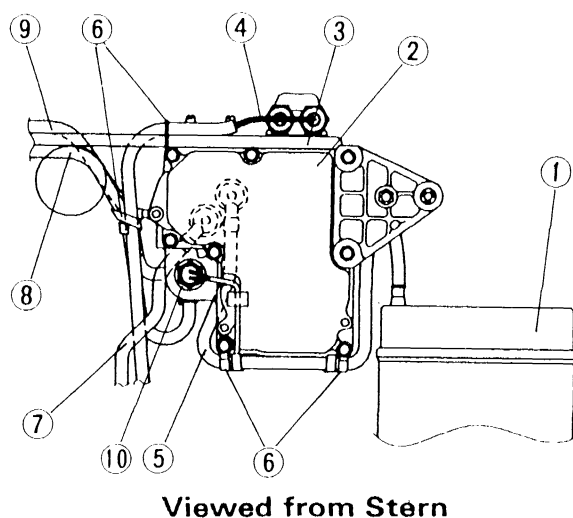
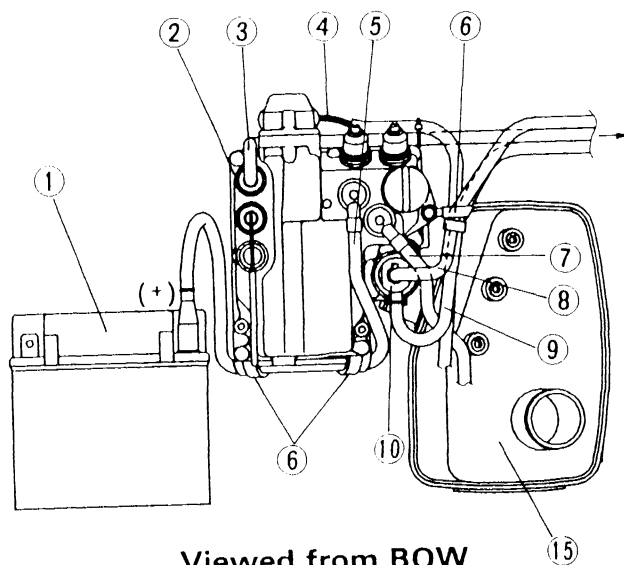
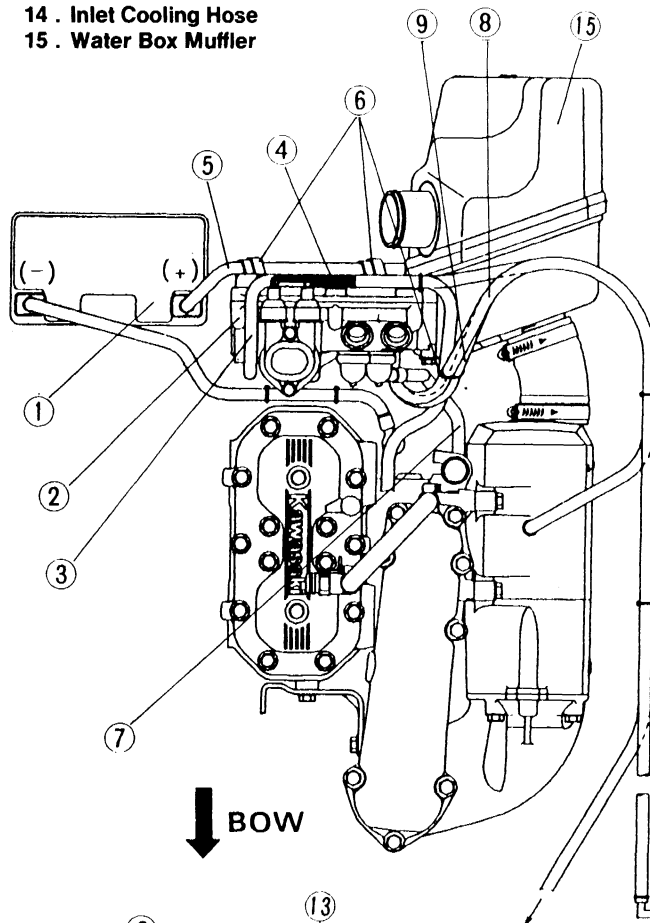
1. Start/Stop Switch Leads
2. Throttle Cable
3. Steering Cable
4. Wiring Clamps
5. Fuel Vent Hose
6. Clamp
7. Control Cables
8. Supply Fuel Hose
9. Return Fuel Hose
10. Fuel Knob
11. Reel
12. Fuel Tap





1. Throttle Cable
2. Choke Cable
3. Carburetor
4. Clamp
5. Return Fuel Hose
6. Supply Fuel Hose
7. Battery Cable (-)
8. Battery
9. Bilge Hose
10. Battery Cable (+)
11. Electric Case
12. Magneto Leads
13. Start/Stop Switch Leads
14. Bypass Cooling Hose (from chamber)
15. Bypass Cooling Hose (to Bypass Outlet)
16. Starter Motor Cable
17. Cooling Hose
18. Pulse Hose

- 1 . Battery
- 2 . Electric Case
- 3 . Start/Stop Switch Leads
- 4 . Magneto Leads
- 5 . Battery Cable (+)
- 6 . Clamp
- 7 . Starter Motor Cable
- 8 . Bypass Cooling Hose (to Bypass Outlet)
- 9 . Bypass Cooling Hose (from Chamber)
- 10 . Temperature Sensor
- 11 . Starter Motor
- 12 . Coupling
- 13 . Intake Manifold
- 14 . Inlet Cooling Hose
- 15 . Water Box Muffler



Fuel System

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		Installation Notes	*
		Cleaning	*

* = Base Manual

2-2 FUEL SYSTEM

Exploded View

1. Main Jet

2. Pilot Jet

3. Diaphragm Needle

4. Check Valve

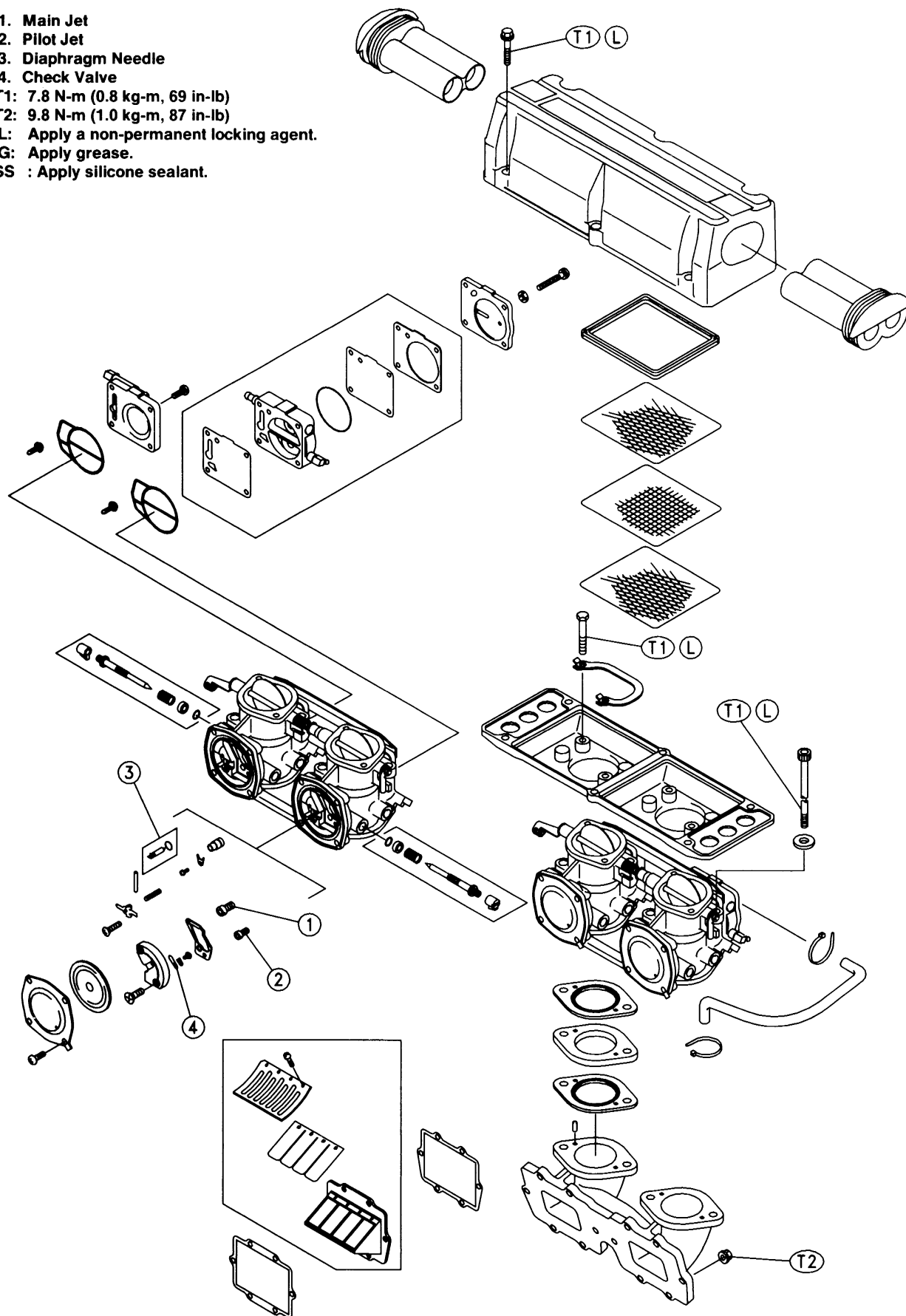
T1: 7.8 N·m (0.8 kg-m, 69 in-lb)

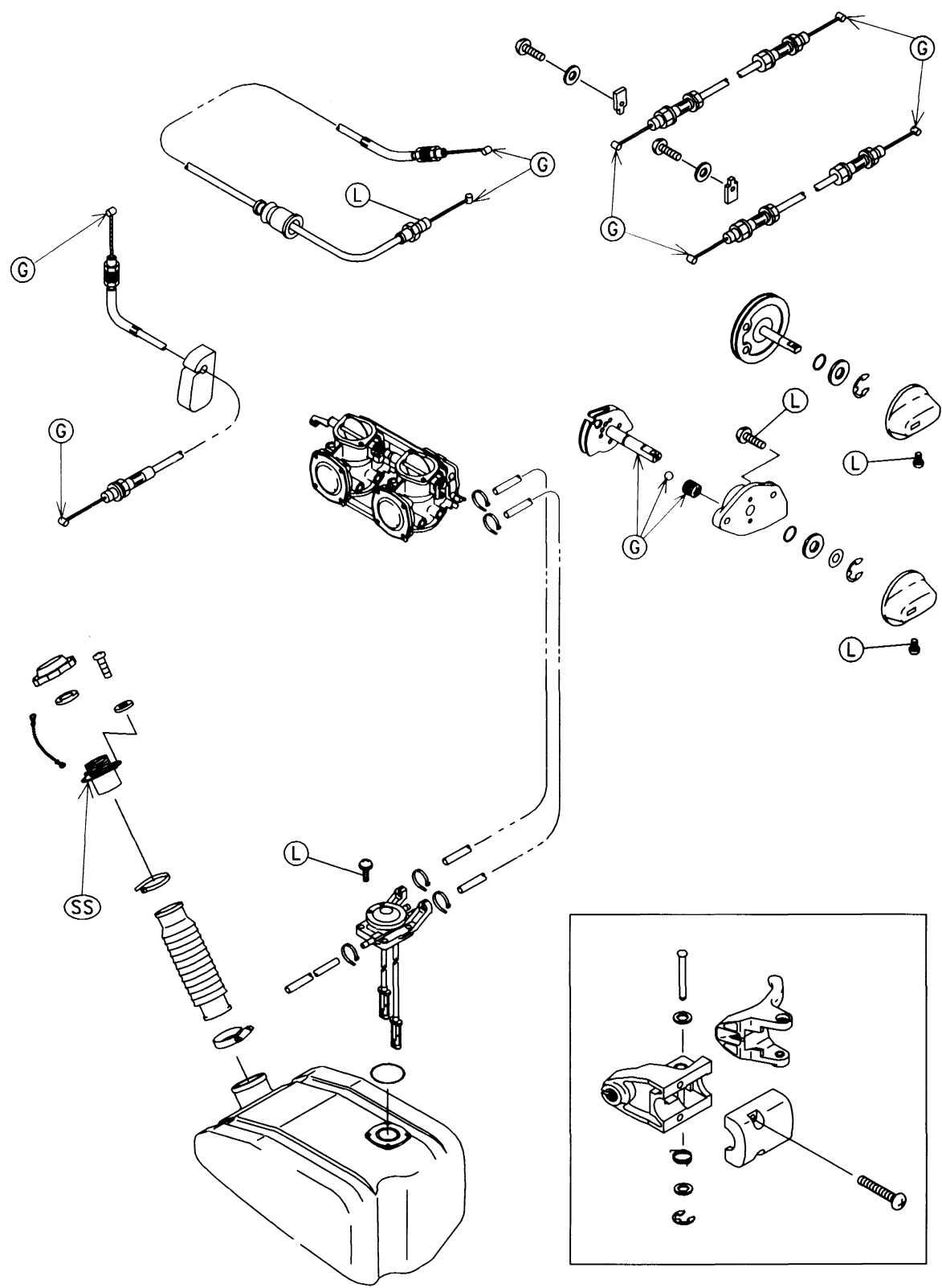
T2: 9.8 N·m (1.0 kg-m, 87 in-lb)

L: Apply a non-permanent locking agent.

G: Apply grease.

SS : Apply silicone sealant.





2-4 FUEL SYSTEM

Specifications

Item	Standard	Service Limit
Carburetor:		
Make, type	Mikuni BN40-38 x 2 (Diaphragm)	---
Size	38 mm Venturi	---
Mixture screws: Low speed	1/2 \pm 1/4 turn open	---
High speed	1.0 \pm 1/4 turn open	---
Main jet	# 147.5	---
Pilot jet	# 67.5	---
Idle speed: in water	1 250 \pm 100 rpm	---
out of water	1 700 \pm 100 rpm	---
Reed Valve:		
Reed warp	---	0.2 mm
Fuel Tank:		
Capacity	15 L (including 2.3 L reserve)	---

Special Tool – Pressure Cable Luber: K56019-021

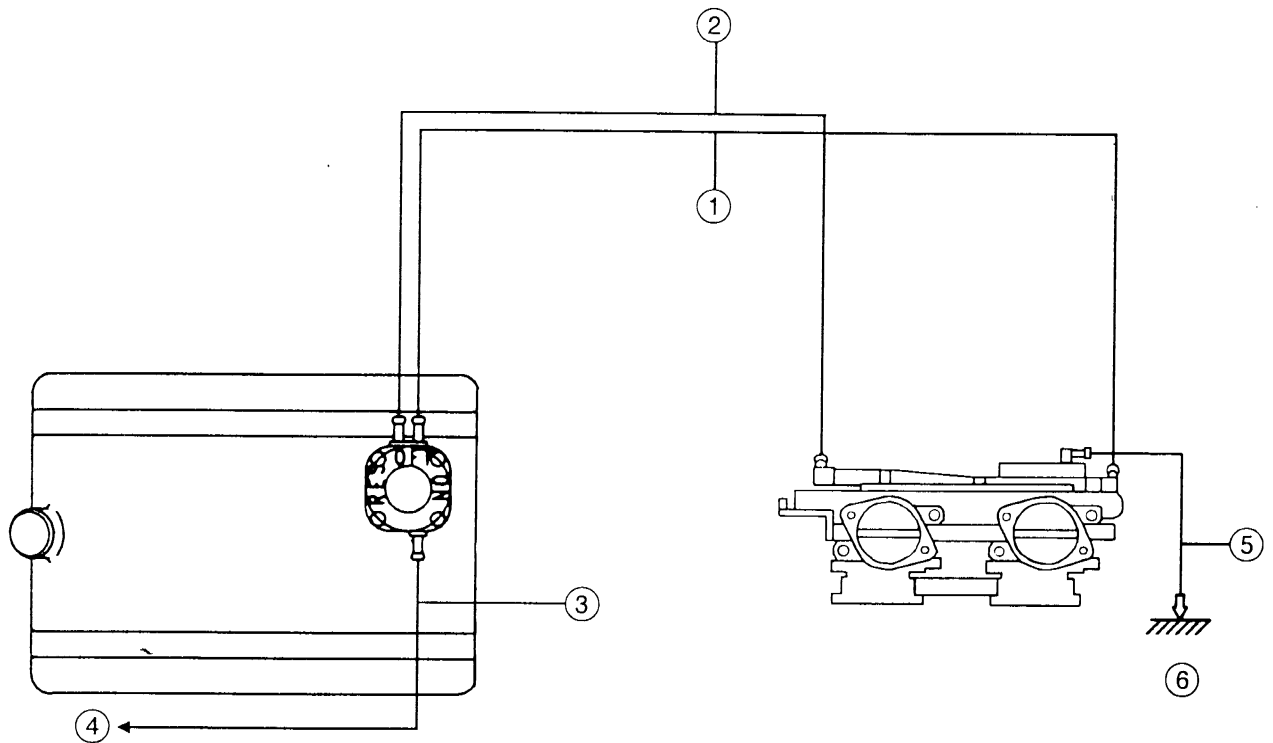
Watercraft Strap Tool: 57001-1294

(This Special Tool is available for the rubber strap removal and installation.)

Sealant – Kawasaki Bond (Silicone Sealant): 56019-120

Fuel System Diagram

1. Supply
2. Return
3. Vent
4. To Handle Pole
5. Pulse
6. Engine

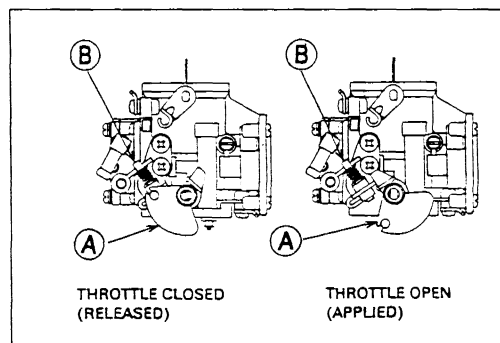


2-6 FUEL SYSTEM

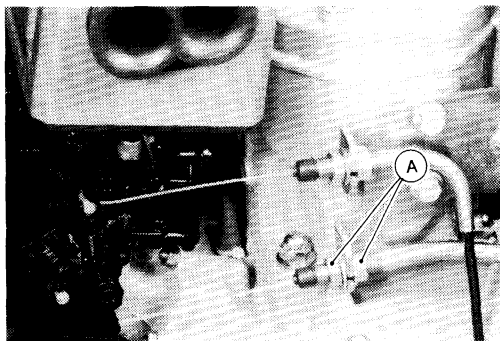
Throttle Case and Cable

Throttle Cable Adjustment

- Check throttle cable adjustment.
- With the throttle lever released, the lower stop on the throttle pivot arm [A] should rest against the idle adjust screw [B], and there should be slight slack in the throttle cable.
- When the throttle lever is fully applied (pulled), the upper stop on the pivot arm should be all the way up against the stop on the carburetor.

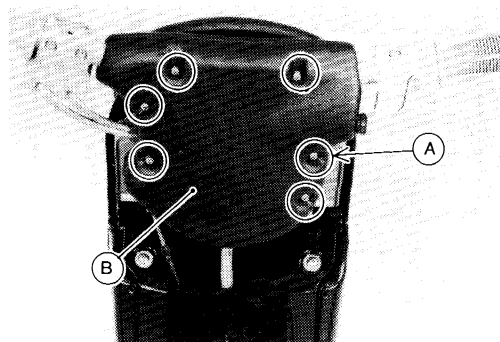


- If necessary, adjust the throttle cable.
- Loosen and turn the locknuts [A] at the cable mounting bracket until the lower stop on the pivot arm hits against the idle adjust screw with slight cable slack.
- Tighten the locknuts securely.

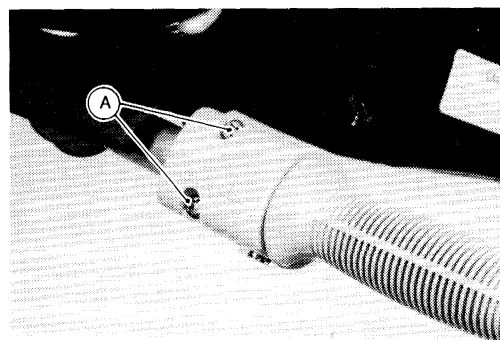


Throttle Case and Cable Removal

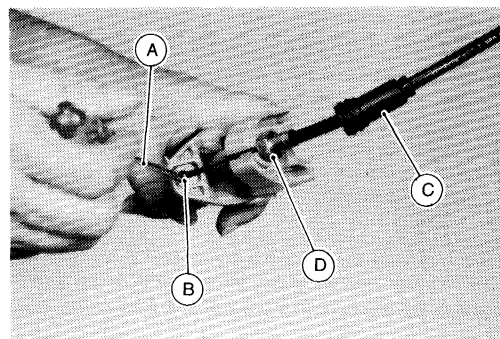
- Unscrew the mounting screws [A], remove the handlebar pad [B].



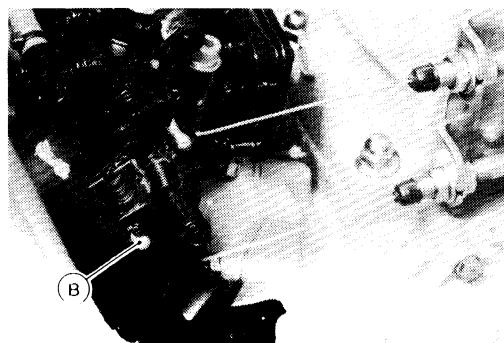
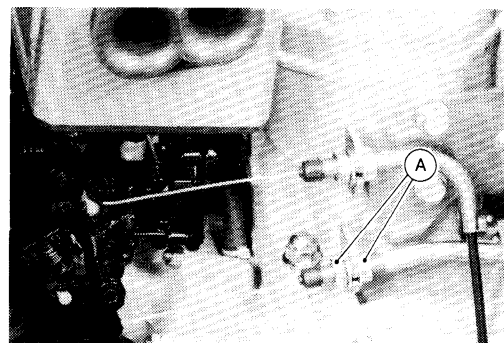
- Remove the throttle case.
- Remove the throttle case bolts [A] and separate the case halves.



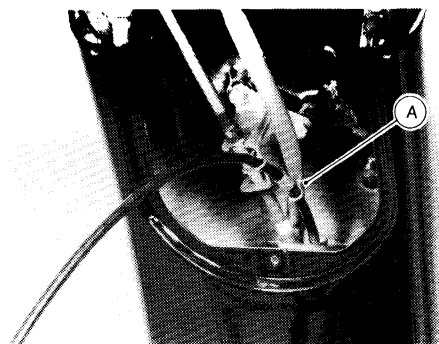
- Disconnect the throttle cable from the case.
- Use a screw driver [A] to separate the tip of the cable end [B] from the case body.
- Slide the rubber boot [C] out of the place.
- Unscrew the throttle cable fitting nut [D].



- Disconnect the throttle cable from the carburetor.
- Loosen the adjuster locknuts [A] and slide the cable from the bracket.
- Slide the cable lower end [B] from the shaft lever.



- Remove the handle pole cover.
- Unfasten the throttle cable from the cable holder [A].



- Pull the throttle cable from the handle pole.
- Lubricate the cable passage in the handle pole with a penetrating rust inhibitor.
- Reach under the front deck and pull the throttle cable from the handle pole.



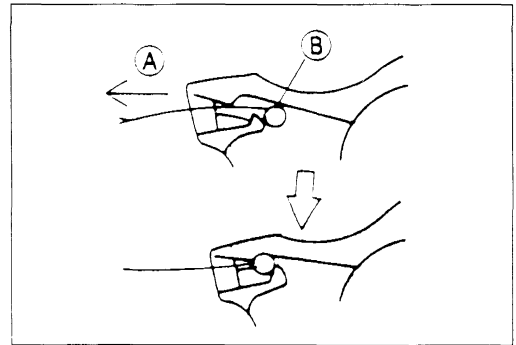
Throttle Case and Cable Installation Notes

- Lubricate the outside of the new cable with a penetrating rust inhibitor to ease cable installation.
- Check throttle cable routing to be sure the cable does not bend sharply at the steering pivot nut. Check the cable at both extremes of handlebar movement.
- Apply a non-permanent locking agent to the throttle cable threads at the throttle case.
- Adjust the throttle cable (see Throttle Cable Adjustment).



2-8 FUEL SYSTEM

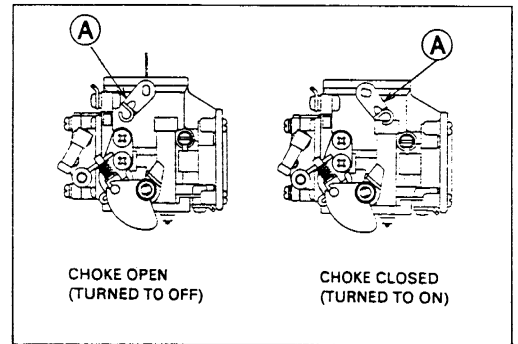
- Pulling the throttle cable [A], position the tips of the cable end [B] as shown.



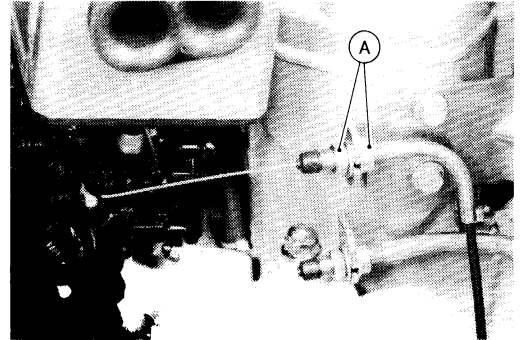
Choke Cable

Adjustment

- When the choke knob is turned to the OFF position the choke butterfly valve in the carburetor should be completely open. Check that the choke pivot arm [A] stands is up all the way toward the right side of the boat with minimal cable slack.

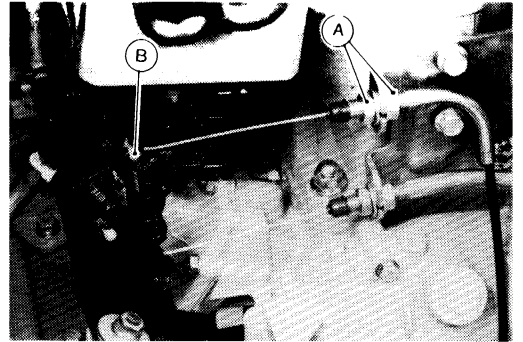


- If necessary, adjust the choke cable.
 - Turn the choke knob to the OFF position (counterclockwise).
 - Loosen and turn the locknuts [A] to allow little cable slack.
 - Tighten the locknuts.

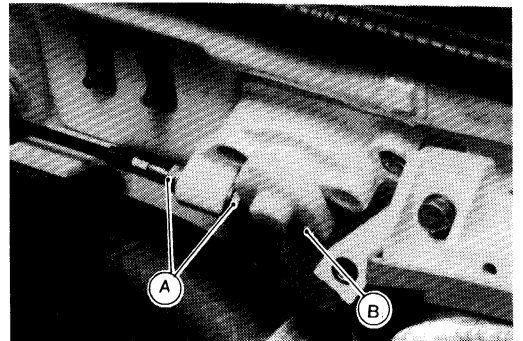


Removal

- Disconnect the choke cable from the carburetor.
 - Loosen the adjuster locknuts [A] and slide the cable from the bracket.
 - Slide the cable lower end [B] from the pivot arm.



- Remove the electric case (see Electric Case Removal in the Electrical System chapter).
- Loosen the locknuts [A] and disconnect the cable tip [B].



2-10 FUEL SYSTEM

Carburetor/Fuel Pump

Idle Speed Adjustment

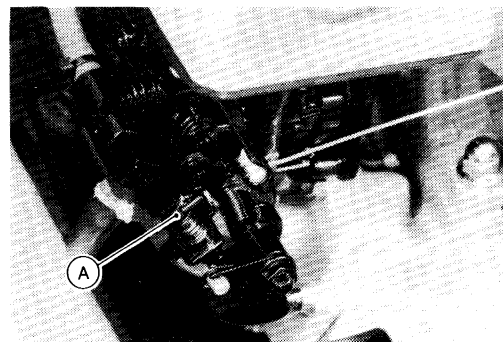
The normal idle speed setting is the lowest stable speed.

- Turn the idle adjusting screw [A] as required to reach this setting.

Idle Speed

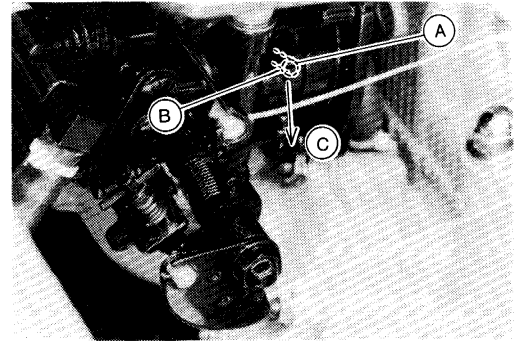
1,250 \pm 100 rpm (in water)

1,700 \pm 100 rpm (out of water)



Mixture Screw Adjustment

Since every carburetor is adjusted individually at the factory using a flow meter, specific mixture screw settings cannot be given. After adjustment, a cap [A] is installed over each mixture screw head [B] with the point straight down [C] to identify proper mixture screw settings for each until. **DO NOT CHANGE THESE SETTINGS.** If the carburetor is tampered with and these settings cannot be relocated, set the mixture screws to the following guide line.



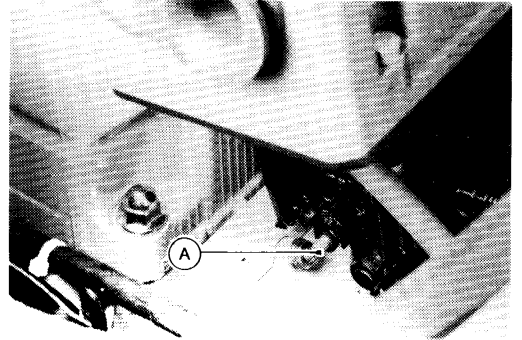
- Pull out the mixture screw caps.
- To set each screw, turn it in until seats lightly, and then back it out the specified number of turns.

Mixture Screw	Turns out
Low Speed [A]	$1/2 \pm 1/4$
High Speed [B]	$1.0 \pm 1/4$

These guideline represent a "starting point" from which additional fine tuning of the carburetor may be necessary.

NOTE

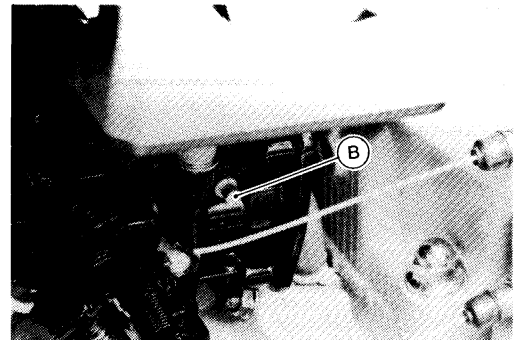
- Remove the carburetor assembly from the intake manifold to set the low speed screw of the front carburetor and the high speed screw at the rear.



CAUTION

Do not force the mixture screws into their seats. You could damage the screws or the carburetor.

Operating the watercraft with the high speed screw at too lean a setting (screwed in clockwise too far) could cause serious engine damage.

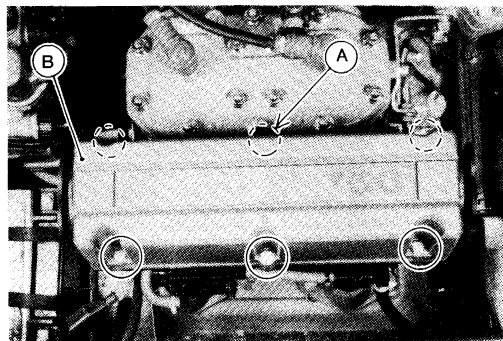


Carburetor Removal

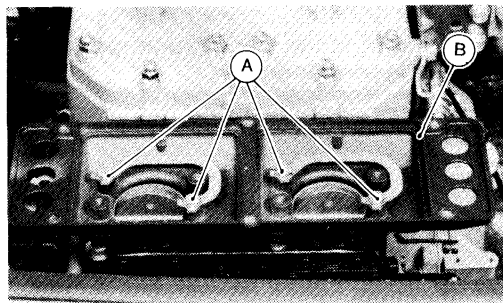
- Remove:

- Air intake Cover Mounting Bolts [A].

- Air Intake Cover [B].



- Remove the arrester case mounting bolts [A], and remove the arrester case [B].



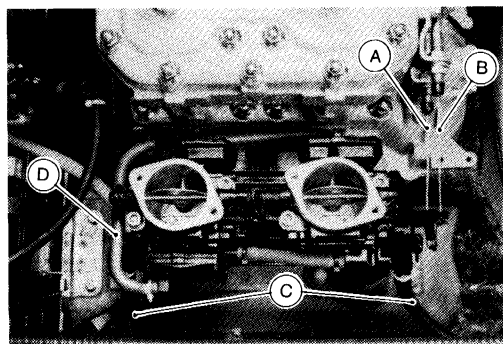
- Disconnect:

- Throttle Cable [A]

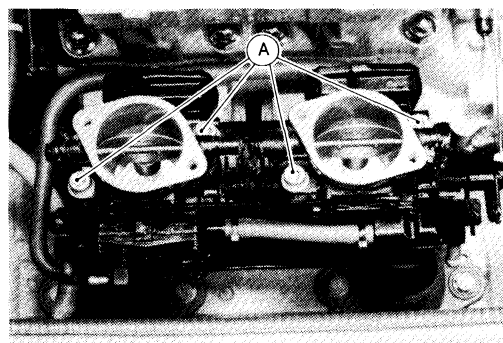
- Choke Cable [B]

- Fuel Hoses [C]

- Pulse Hose [D]



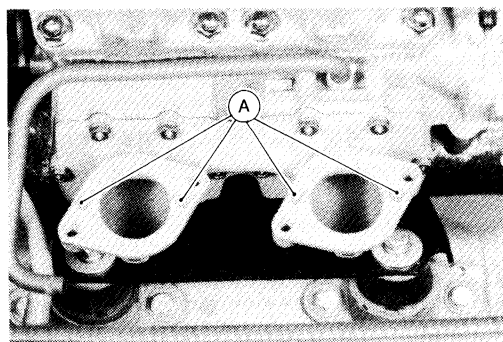
- Remove the carburetor mounting bolts [A], and lift the carburetor off the intake manifold.



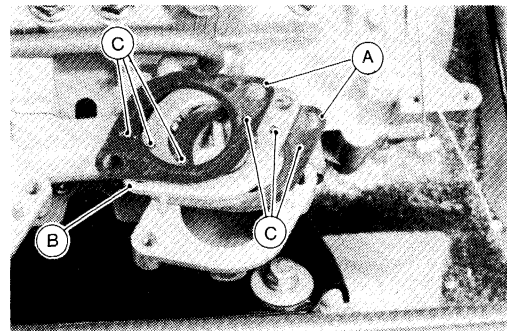
Carburetor Installation Notes

- Replace the gasket under the carburetor with new ones.

- Check that the knock pins [A] on the intake manifold are in places.



- Set the gaskets [A] and under plate [B] with aligning the their knock pin holes [C].
- Install the gaskets with under plate on the intake manifold.



- Apply a non-permanent locking agent to the carburetor mounting bolts and the arrester case mounting bolts.

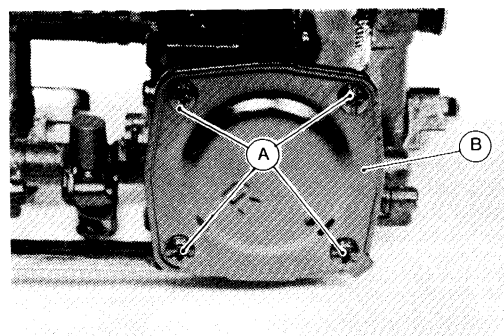
Torque – Carburetor Mounting Bolts: 7.8 N-m (0.8 kg-m, 69 in-lb)

Arrester Case Mounting Bolts: 7.8 N-m (0.8 kg-m, 69 in-lb)

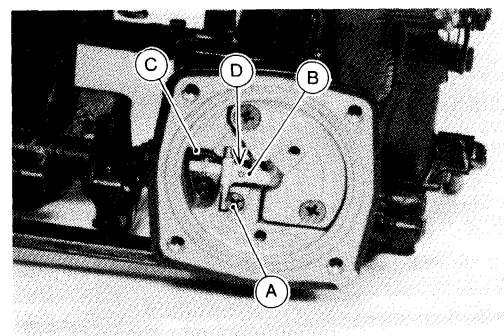
- Band the tab portions of the double washer over the arrester case mounting bolts.
- Adjust the throttle and choke cables (see Throttle Cable Adjustment, Choke Cable Adjustment).

Carburetor Disassembly

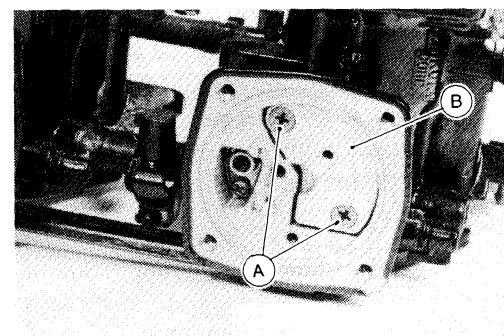
- Remove the carburetor (see Carburetor Removal).
- Unscrew the carburetor cover screws [A] and take off the carburetor cover [B] and the diaphragm.



- Unscrew the float arm set screw [A]
- Remove:
Float Arm [B] and Pin
Diaphragm Needle [C]
Spring [D]



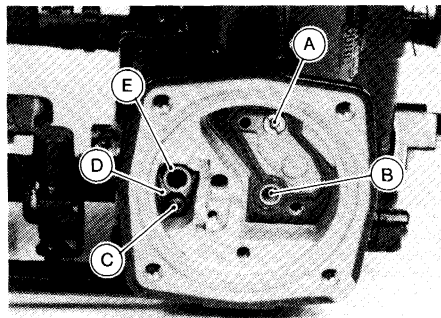
- Unscrew the check valve body screws [A] and take off the check valve body [B].



2-14 FUEL SYSTEM

● Remove:

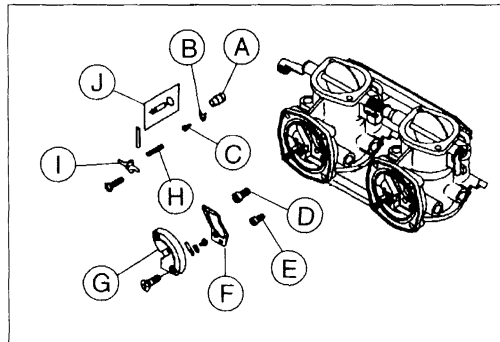
- Main Jet [A]
- Pilot Jet [B]
- Screw [C]
- Plate [D]
- Valve Seat [E]



Carburetor Assembly

● Install:

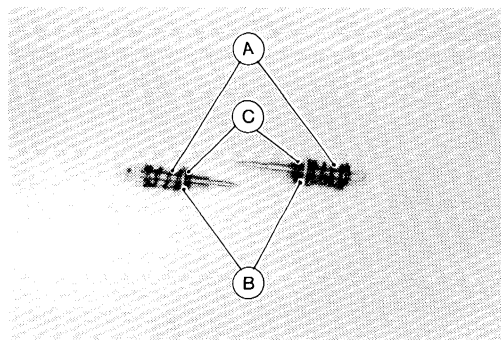
- Valve Seat [A], Plate [B] and Screw [C]
- Main Jet [D]
- Pilot Jet [E]
- Gasket [F]
- Check Valve Body [G] and Screws
- Spring [H]
- Float Arm [I] and Diaphragm Needle [J]



NOTE

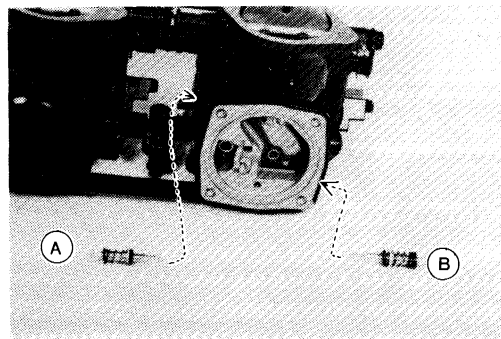
○ If the mixture screws need to be removed, check number of return rotations of mixture screws beforehand.

- To remove the mixture screws, turn them counterclockwise until they come out. Do not lose the spring [A], washer [B], and O-ring [C] on each screw.



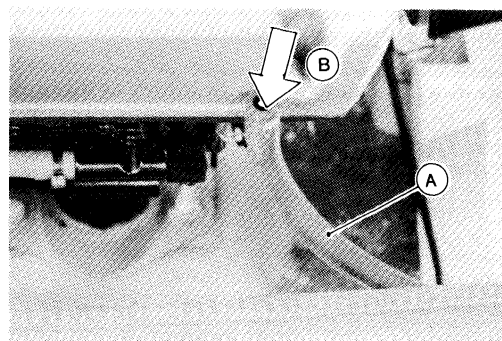
- If the mixture screws were removed, install them, as shown.

- A. High Speed Screw
- B. Low Speed Screw



NOTE

○ After the carburetor has been disassembled and cleaned, it should be primed before starting the engine to save the battery. Pull off the fuel return hose [A] at the carburetor, and blow [B] through it until fuel appears at the fuel return fitting on the carburetor. The fuel system is now full of fuel.



⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Position the starter interlock switch to the locked position. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

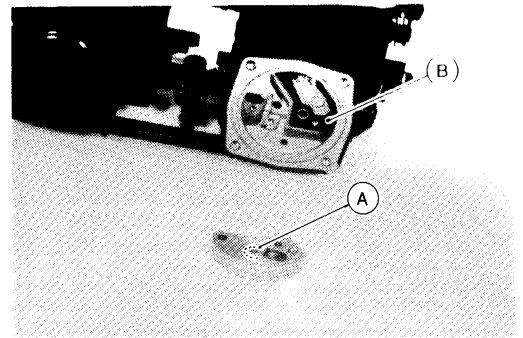
Carburetor Cleaning and Inspection

- Disassemble the carburetor (see Carburetor Disassembly).

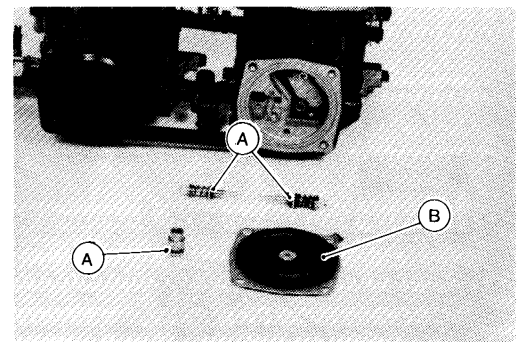
⚠ WARNING

Solvent is toxic and flammable. Avoid prolonged contact with skin and keep away from open flame. Use only in a well ventilated area. Eye protection should be worn when compressed air is used to dry parts. Do not direct air toward anyone. Use 172 kPa (1.75 kg/cm², 25 psi) maximum nozzle pressure.

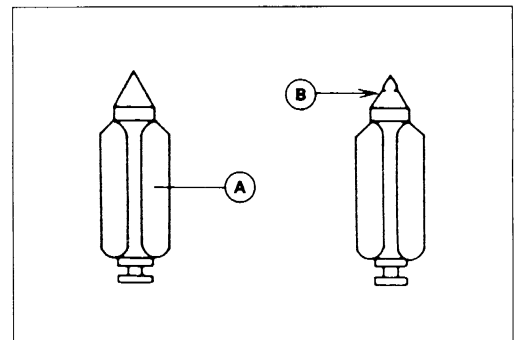
- Immerse all the metal parts in a carburetor cleaning solution.
- Rinse the parts in water.
- When the parts are clean, dry them with compressed air.
- Blow out the air and fuel passages with compressed air.
- Inspect the check valve [A] for damage or deterioration, and replace it if necessary.
- ★ If the gasket [B] under the check valve appears damaged, it may leak and must be replaced.



- Check these rubber parts for damage.
 - O-ring [A]
 - Diaphragm [B]
- ★ If any of these parts are not in good condition, replace them.



- Check the plastic tip on the diaphragm valve needle. It should be smooth, without any grooves, scratches, or tears.
 - Diaphragm Needle [A]
 - Diaphragm Needle Wear [B]
- ★ If the plastic tip is damaged, replace the needle.



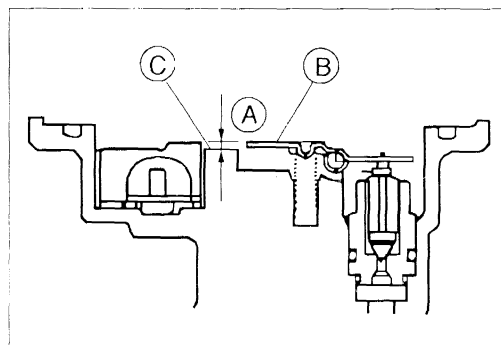
Float Arm Level Inspection and Adjustment

- Remove the carburetor and take out the carburetor cover.
- Check the float arm level [A].
- Inspect the height of the float arm [B] is equivalent to that of the carburetor case [C].

Float Arm Level

$0 \pm 0.2 \text{ mm}$

- ★ If the float arm level is incorrect, bend the float arm very slightly to change the float arm level.

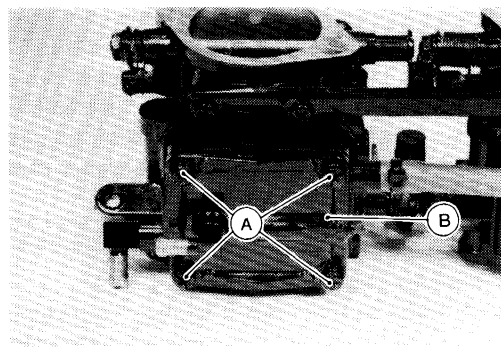


Fuel Pump Removal/Installation Note

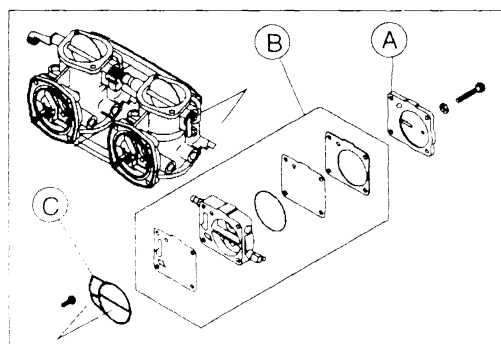
CAUTION

The fuel pump should not be disassembled. If leakage is evident or internal damage is suspected, replace the pump case unit.

- Remove the carburetor.
- Unscrew the fuel pump cover screws [A], disassemble the following.



- [A] Pump Cover
- [B] Pump Case Unit
- [C] O-ring

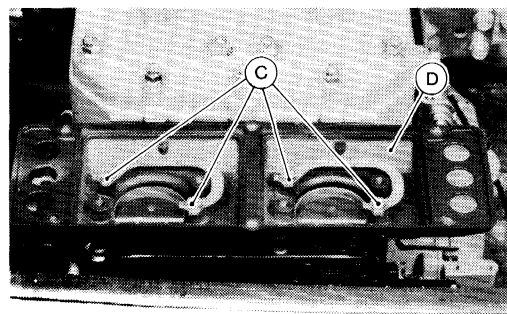
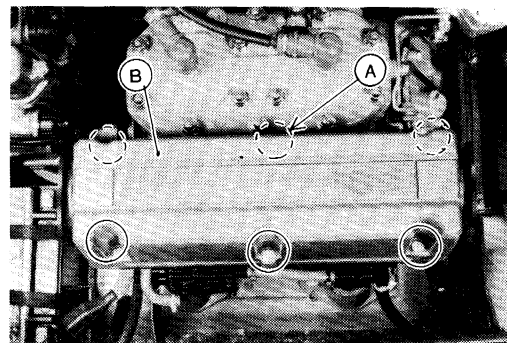


Flame Arrester

Removal

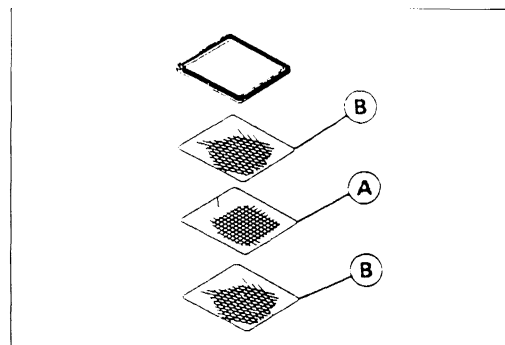
● Remove:

- Air Intake Cover Mounting Bolts [A]
- Air Intake Cover [B]
- Arrester Case Mounting Bolts [C]
- Arrester Case [D]



Installation Notes

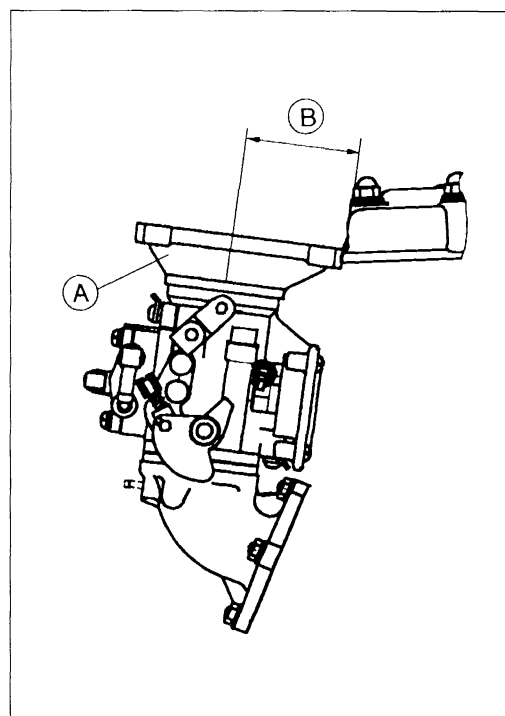
- When assembling the flame arrester, put the screen [A] between two expanders [B].



- Install the arrester case [A] so that its longer side [B] from the intake to arrester case the faces the engine.
- Apply a non-permanent locking agent to the thread of the arrester case mounting bolts and the air intake cover bolts.

Torque – Arrester Case Mounting Bolts: 7.8 N-m (0.8 kg-m, 69 in-lb)
Air Intake Cover Mounting Bolts: 7.8 N-m (0.8 kg-m, 69 in-lb)

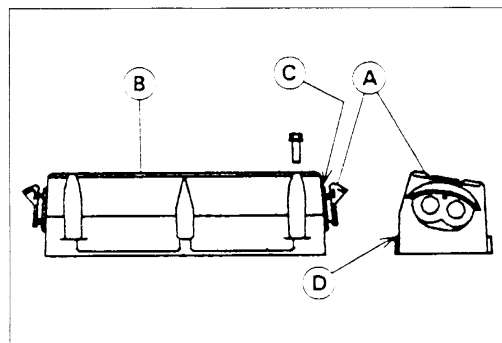
- Bend the tap portions of double washer over the arrester case mounting bolts.



2-18 FUEL SYSTEM

- Install the duct [A] and cover [B], as shown.
- Apply instant glue [C] to the outside of duct.
D. Engine Side
- Apply a non-permanent locking agent to the thread of the air intake cover bolts.

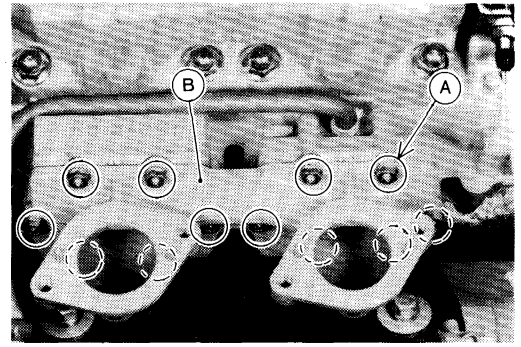
Torque – Air Intake Cover Bolts: 7.8 N-m (0.8 N-m, 69 in-lb)



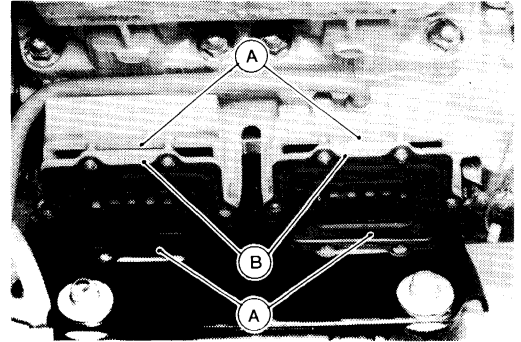
Intake Manifold, Reed Valves

Removal

- Remove:
 - Air Intake Cover
 - Flame Arrester Case
 - Carburetor (see Carburetor Removal)
- Remove the intake manifold mounting nuts [A] and remove the intake manifold [B].



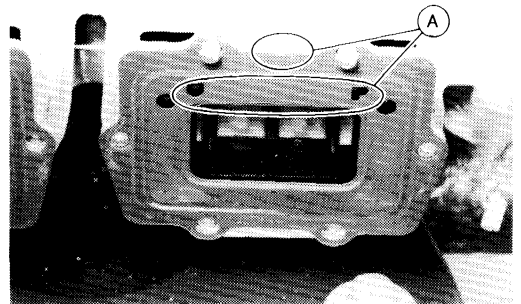
- Pull out the gaskets [A] and the reed valves [B].



Installation Notes

- Replace the gaskets with new ones.
- Install the reed valves and gaskets with "UP" marks [A] facing upward.
- Install the intake manifold.

Torque – Intake Manifold Mounting Nuts : 9.8 N-m (1.0 kg-m, 87 in-lb)



2-20 FUEL SYSTEM

Fuel Tank

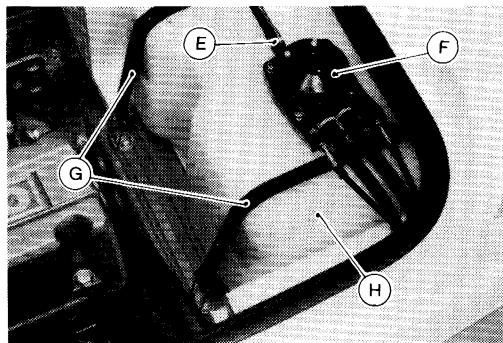
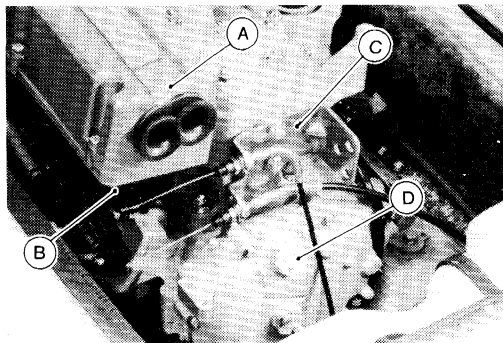
Fuel Tank Removal

- If the level of the fuel is above the inlet neck, siphon some fuel out to prevent spilling it.

⚠ WARNING

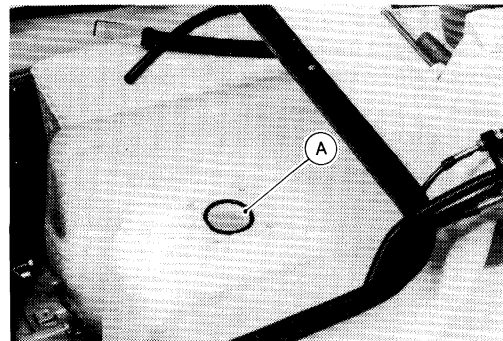
Gasoline is extremely flammable and can be explosive under certain conditions. Push the STOP button. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Remove:
 - Exhaust Pipe and Exhaust Chamber (see the Exhaust System chapter)
 - Flame Arrester Cover [A]
 - Arrester Case [B]
 - Cable Holder [C]
 - Breather [D]
 - Vent Hose (disconnect) [E]
 - Fuel Tap Assembly [F]
 - Rubber Strap [G]
 - Clamp on the filler Neck
 - Fuel Tank [H]



Fuel Tank Installation Notes

- Be sure the O-ring [A] is on the fuel tank.



Engine Lubrication System

3

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Specifications	3-2
----------------------	-----

3-2 ENGINE LUBRICATION SYSTEM

Specifications

Item	Standard
Engine Oil: Type	2-stroke, N.M.M.A. Cerrified for Service TC-W3 (Gas/Oil Premix ratio 60:1)

Exhaust System

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Exploded View	4-2
Expansion Chamber	4-3
Removal	*
Installation Notes	4-3
Expansion Chamber Cleaning and Inspection	*
Exhaust Manifold	*
Removal	*
Installation Notes	4-5
Exhaust Manifold Cleaning and Inspection	*
Water Box Muffler	4-7
Removal	4-7
Installation Notes	4-7
Inspection	*

* = Base Manual

4-2 EXHAUST SYSTEM

Exploded View

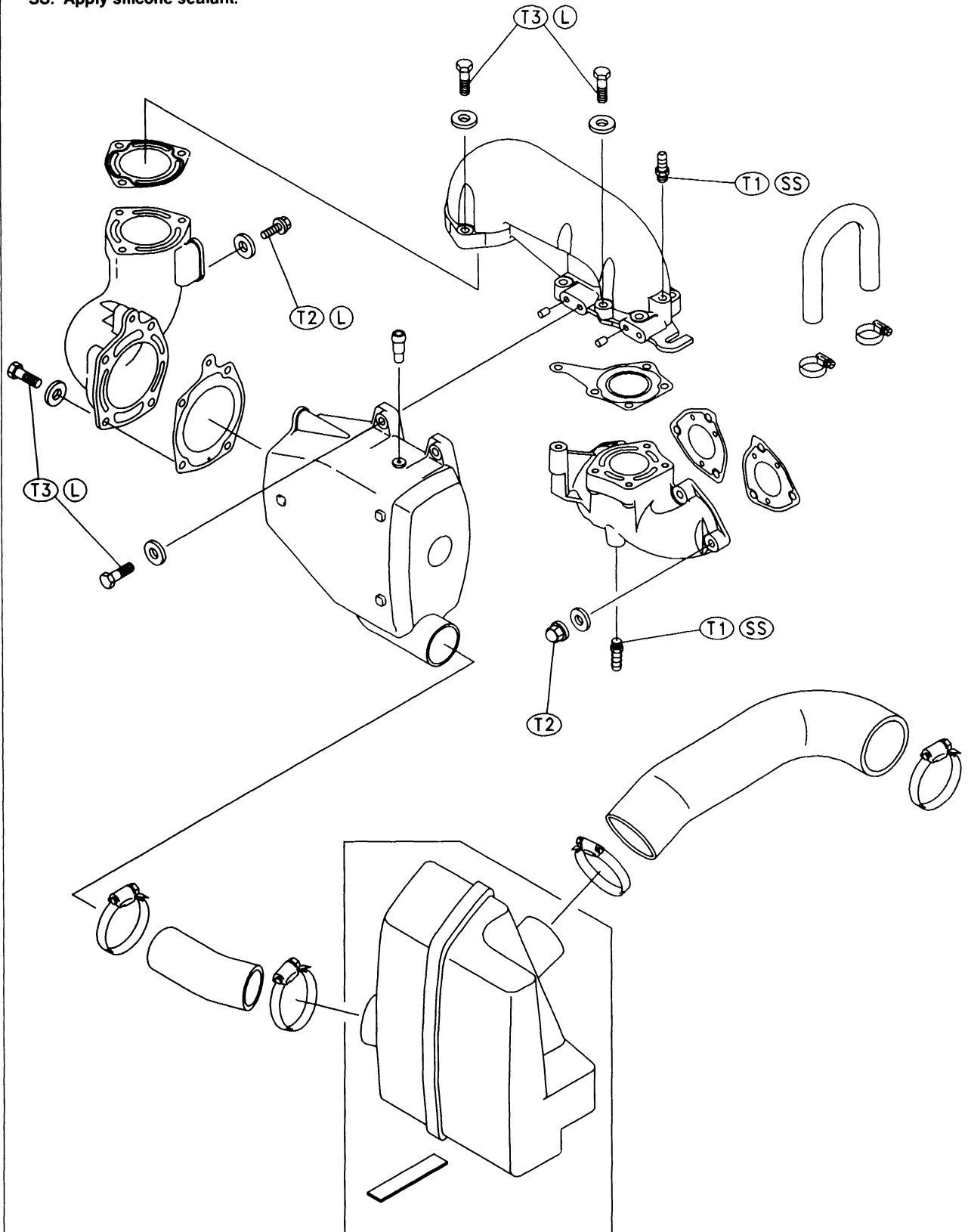
T1: 9.8 N-m (1.0 kg-m, 87 in-lb)

T2: 20 N-m (2.0 kg-m, 14.5 ft-lb)

T3: 29 N-m (3.0 kg-m, 22 ft-lb)

L: Apply a non-permanent locking agent.

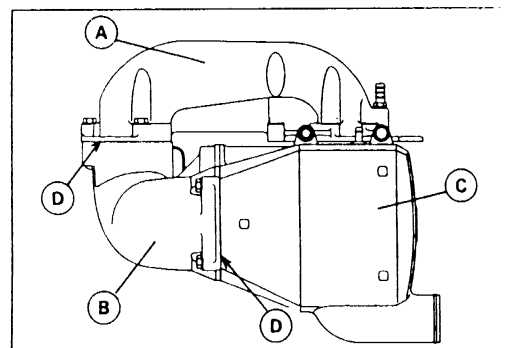
SS: Apply silicone sealant.



Expansion Chamber

Installation Notes

- Assemble provisionally the exhaust pipe [A], the front muffler [B] and the expansion chamber [C] with the gaskets [D].

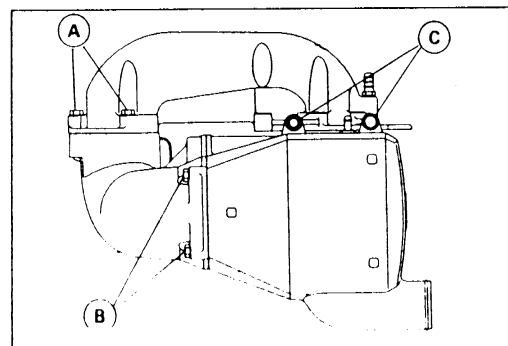


- Apply a non-permanent locking agent to all the bolts and torque all the bolts in the following order.

Front Muffler Mounting Bolts: 29 N-m (3.0 kg-m, 22 ft-lb) [A]

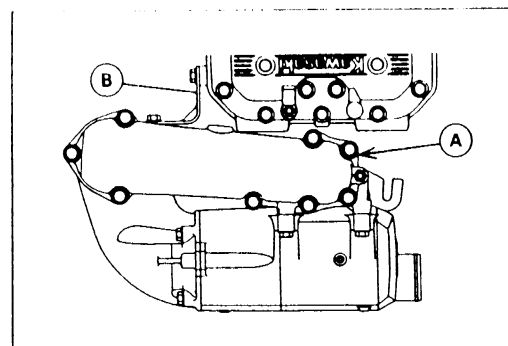
Expansion Chamber Mounting Bolts: 29 N-m (3.0 kg-m, 22 ft-lb) [B]

Expansion Chamber Mounting Bolts: 29 N-m (3.0 kg-m, 22 ft-lb) [C]



- Install the above assembly provisionally on the exhaust manifold that is set on the engine with the gasket [A].

- Install provisionally the cable holder [B] between the cylinder and the front muffler.



- Apply a non-permanent locking agent to all the bolts and torque all the bolts in the following order.

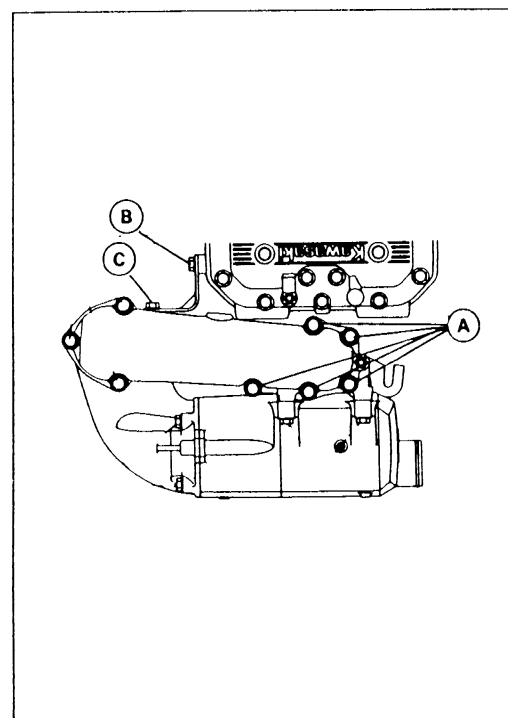
Exhaust Pipe Mounting Bolts: 29 N-m (3.0 kg-m, 22 ft-lb) [A]

Cable Holder Mounting Bolts (Cylinder side):

20 N-m (2.0 kg-m, 14.5 ft-lb) [B]

Cable Holder Mounting Bolts (Front Muffler side):

20 N-m (2.0 kg-m, 14.5 ft-lb) [C]

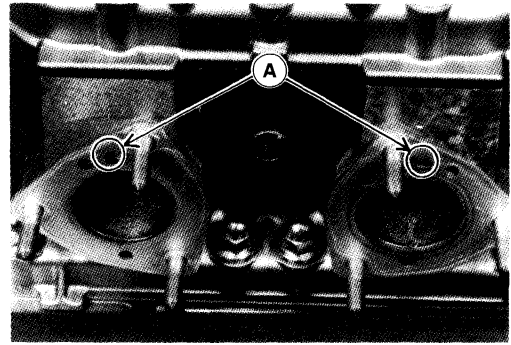


4-4 EXHAUST SYSTEM

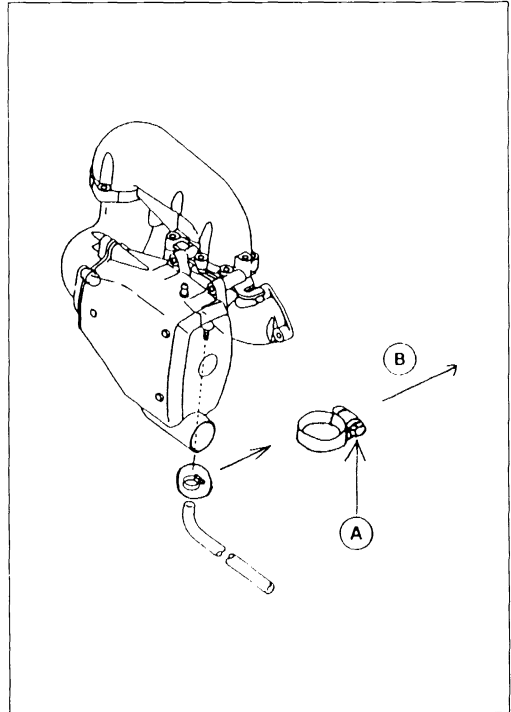
Exhaust Manifold

Installation Notes

- Install the exhaust manifold gaskets so that the arrows [A] point the up.



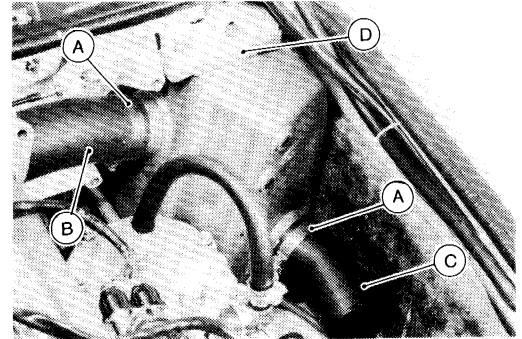
- The cooling hose clamp bolt [A] should face toward cylinder [B].



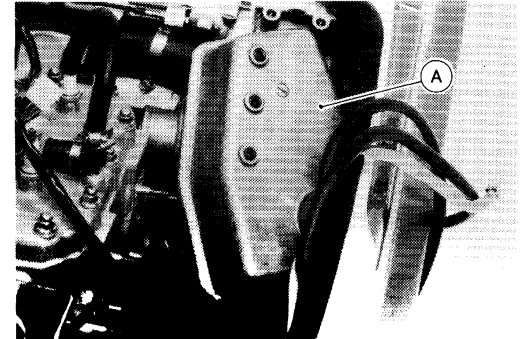
Water Box Muffler

Removal

- Remove or disconnect:
 - Electric Case
 - Exhaust Pipe, Front Muffler and Expansion Chamber as a set
 - Exhaust Manifold
 - Clamp [A]
 - Outlet Tube [B]
 - Inlet Tube [C]
 - Muffler Bracket [D]

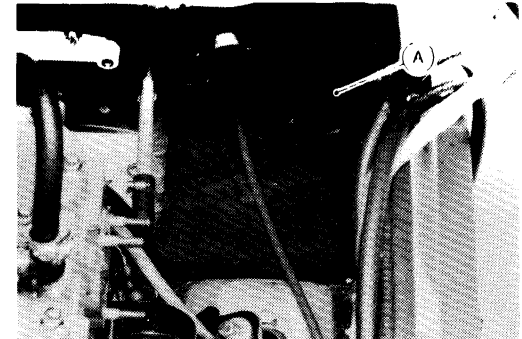


- Rotating the water box muffler [A] as shown, remove the muffler out of the hull.



Installation Notes

- Be sure the rubber mat [A] is in place before putting the water box muffler into the hull.



Engine Top End

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Disassembly and Assembly:	*
Disassembly	*
Assembly Notes	*
Maintenance and Inspection:	*
Compression Measurement	*
Cylinder Head Warp Inspection	*
Cylinder Wear Inspection	*
Piston Diameter Measurement	*
Piston/Cylinder Clearance	*
Boring and Honing	*
Piston Ring, Piston Ring Groove Inspection	*
Piston Ring End Gap	*

* = Base Manual

5-2 ENGINE TOP END

Exploded View

T1: 9.8 N-m (1.0 kg-m, 87 in-lb)

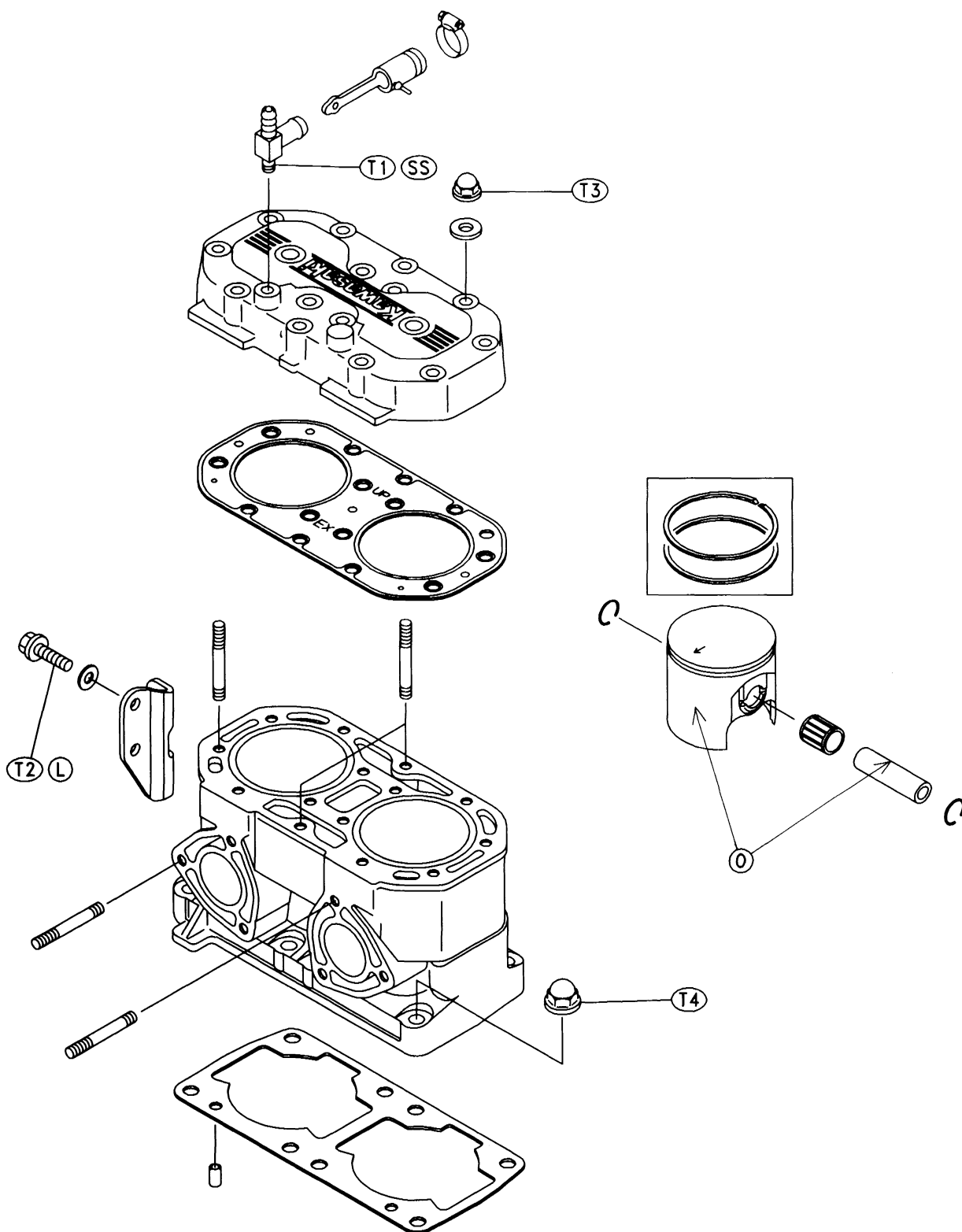
T2: 20 N-m (2.0 kg-m, 14.5 ft-lb)

T3: 29 N-m (3.0 kg-m, 22 ft-lb)

T4: 34 N-m (3.5 kg-m, 25 ft-lb)

SS: Apply silicone sealant.

O: Apply engine oil.



Specifications

Item	Standard	Service Limit
Cylinder Head:		
Cylinder compression	(Usable range) 863 ~ 1333 kPa (8.8 ~ 13.6 kg/cm ² , 125 ~ 193 psi) (Open throttle)	---
Cylinder head warp	---	0.05 mm
Cylinder, Piston:		
Cylinder inside diameter	80.000 ~ 80.015 mm	80.10 mm
Piston diameter (18 mm up from bottom of skirt)	79.900 ~ 79.915 mm	79.75 mm
Piston/cylinder clearance	0.095 ~ 0.115 mm	---
Oversize piston and rings	+0.5 mm and +1.0 mm	---
Piston ring/groove clearance: Top (keystone)	---	---
Second (keystone)	---	---
Piston ring groove width: Top (keystone)	---	---
Second (keystone)	---	---
Piston ring thickness: Top (keystone)	---	---
Second (keystone)	---	---
Piston ring end gap: Top	0.25 ~ 0.40 mm	0.7 mm
Second	0.25 ~ 0.40 mm	0.7 mm

Special Tools – Piston Pin Puller Assembly: 57001-910
Piston Ring Compressor Grip: 57001-1095
Piston Ring Compressor Belt, $\Phi 67 \sim \Phi 79$: 57001-1097
Compression Gauge: 57001-221
Compression Gauge Adapter, M14 x 1.25: 57001-1159

Engine Removal / Installation

Table of Contents

Exploded View	6-2
Engine Removal/Installation	*
Removal	*
Installation Notes	*

* = Base Manual

6-2 ENGINE REMOVAL / INSTALLATION

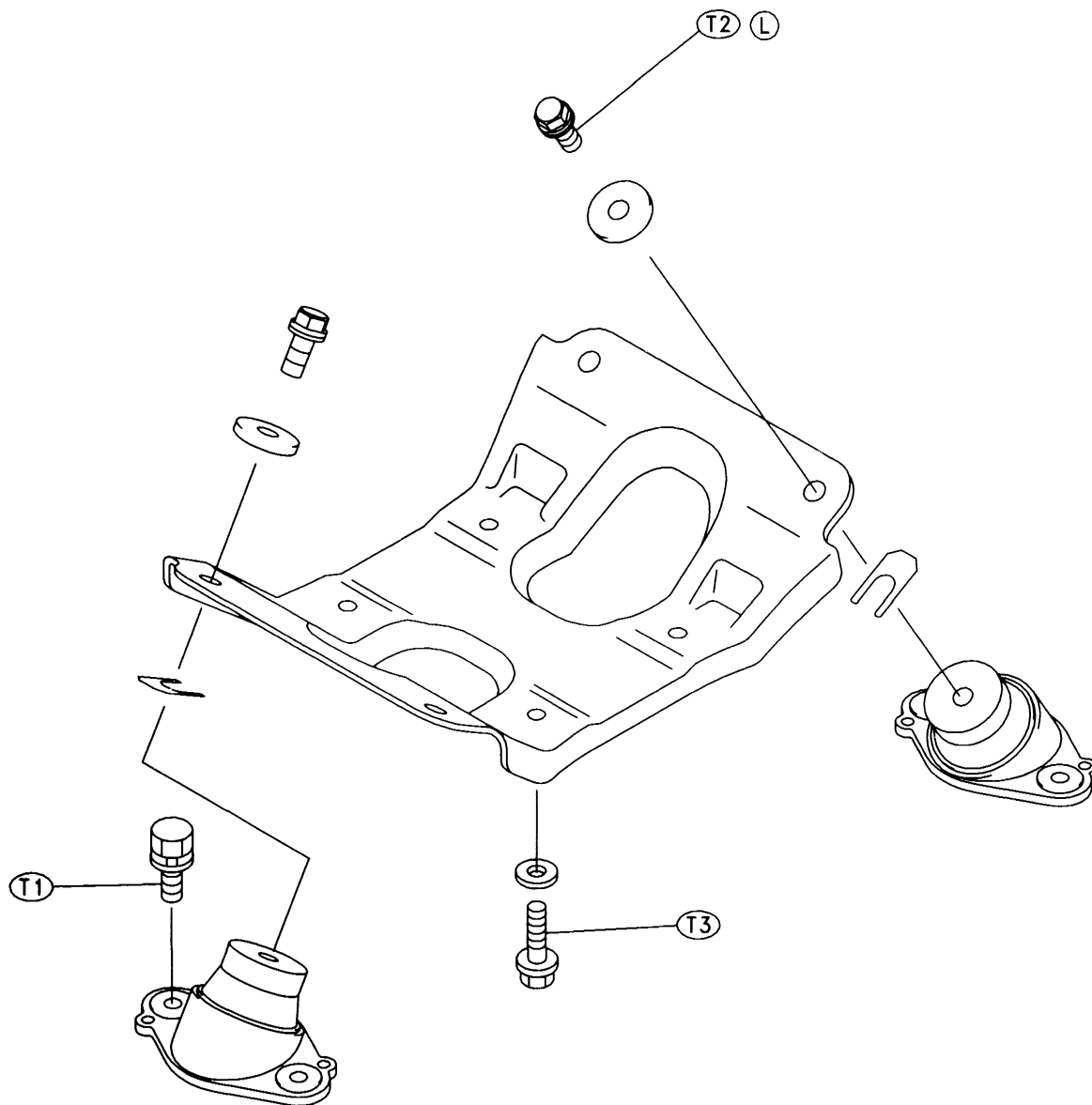
Exploded View

T1: 16 N-m (1.6 kg-m, 11.6 ft-lb)

T2: 36 N-m (3.7 kg-m, 27 ft-lb)

T3: 49 N-m (5.0 kg-m, 36 ft-lb)

L: Apply a non-permanent locking agent.



Engine Bottom End

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Removal	*
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Stator.....	*
Removal	*
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Water Drain Valve.....	*
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Water Drain Valve Installation	*
Crankcase	*
Splitting	*
Assembly Notes	*
Crankshaft Maintenance	*
Connecting Rod Bend/Twist	*
Connecting Rod Big End Radial Clearance	*
Connecting Rod Big End Side Clearance	*
Crankshaft Main Bearing Wear	*
Crankshaft Runout	*
Crankshaft Assembly Specifications	*

* = Base Manual

7-2 ENGINE BOTTOM END

Exploded View

T1: 7.8 N-m (0.8 kg-m, 69 in-lb)

T2: 12 N-m (1.2 kg-m, 8.5 ft-lb)

T3: 29 N-m (3.0 kg-m, 22 ft-lb)

T4: 125 N-m (13.0 kg-m, 94 ft-lb)

L: Apply a non-permanent locking agent.

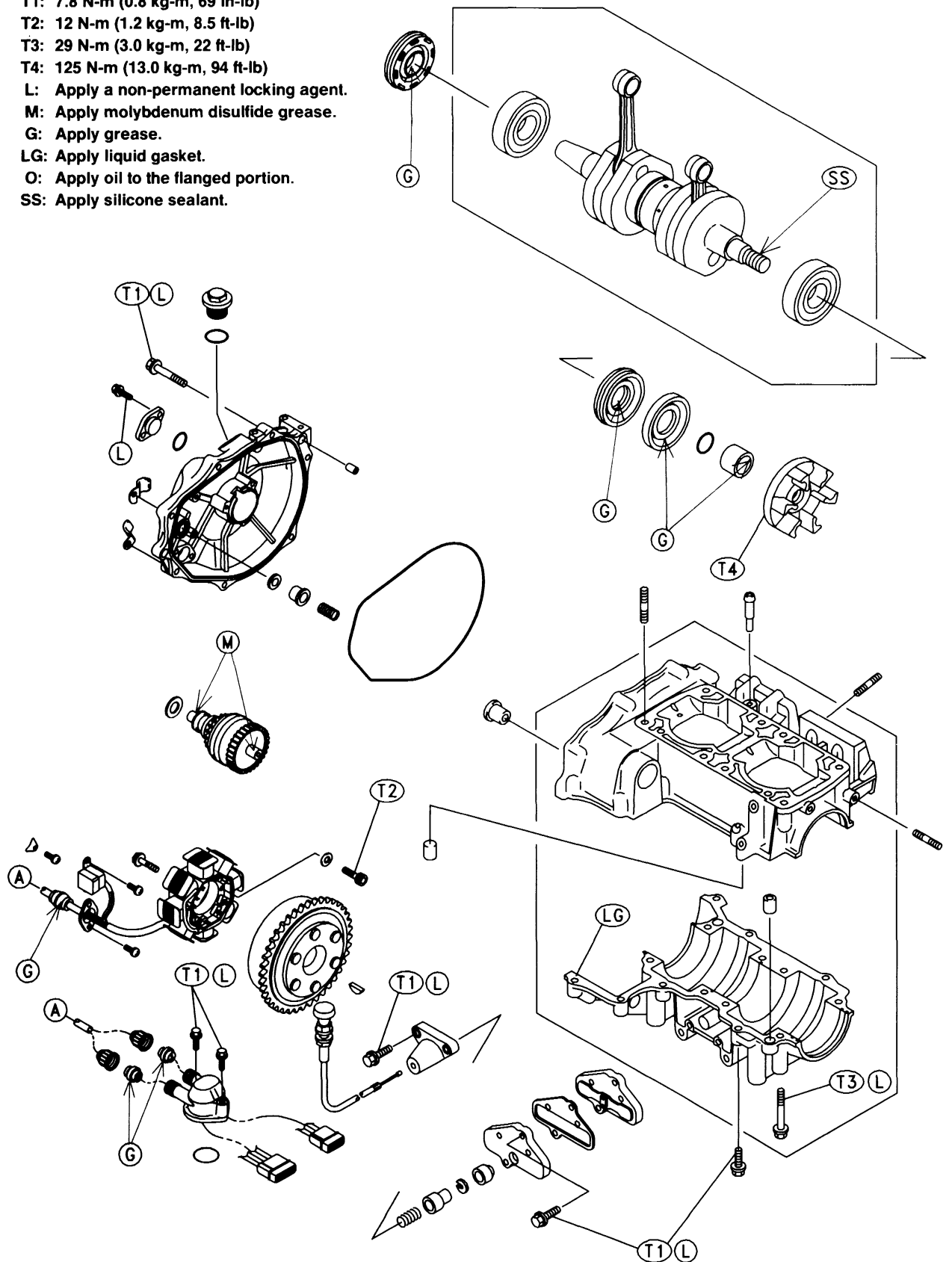
M: Apply molybdenum disulfide grease.

G: Apply grease.

LG: Apply liquid gasket.

O: Apply oil to the flanged portion.

SS: Apply silicone sealant.



Specifications

Item	Standard	Service Limit
Crankshaft, Connecting Rods:		
Crankshaft runout	0.04 mm	0.10 mm TIR
Connecting rod side clearance	0.45 ~ 0.55 mm	0.8 mm
Connecting rod radial clearance	0.018 ~ 0.029 mm	0.08 mm
Connecting rod bend	0.05 mm/100 mm	0.2mm/100mm
Connecting rod twist	0.15 mm/100 mm	0.2mm/100mm

Special Tools – Flywheel Holder: 57001-1313

Coupling Holder: 57001-1230

Rotor Puller, M18 x 1.5: 57001-1258

Sealant – Kawasaki Bond (Liquid Gasket-Black): 92104-1003

Kawasaki Bond (Silicone Sealant): 56019-120

Cooling and Bilge Systems

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Breather Removal	*
Breather Installation	*
Breather Cleaning and Inspection	*
Filter Removal	*
Filter Cleaning and Inspection	*
Cooling and Bilge System Hoses	*
Hose Removal	*
Hose Installation	*
Hose Inspection	*
Cooling and Bilge System Flushing	*
Cooling System Flushing	*
Bilge System Flushing	*

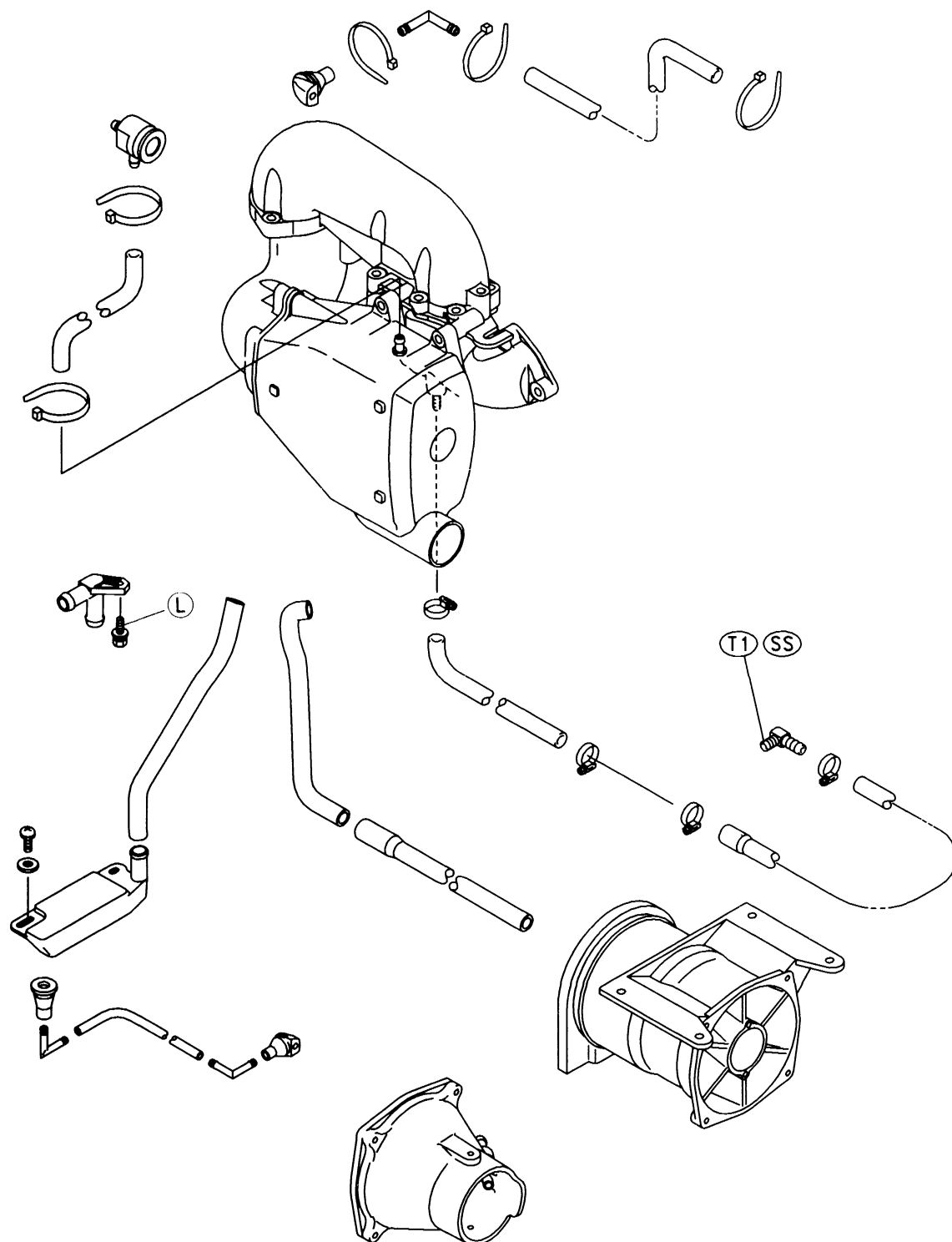
* = Base Manual

8-2 COOLING AND BILGE SYSTEMS

Exploded View

T1: 9.8 N-m (1.0 kg-m, 87 in-lb)

SS: Apply silicone sealant.



Drive System

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Exploded View9-2

Specifications9-3

Drive Shaft/Drive Shaft Holder*

 Drive Shaft Removal/Installation*

 Drive Shaft Holder Removal/Disassembly*

 Drive Shaft Holder Assembly/Installation*

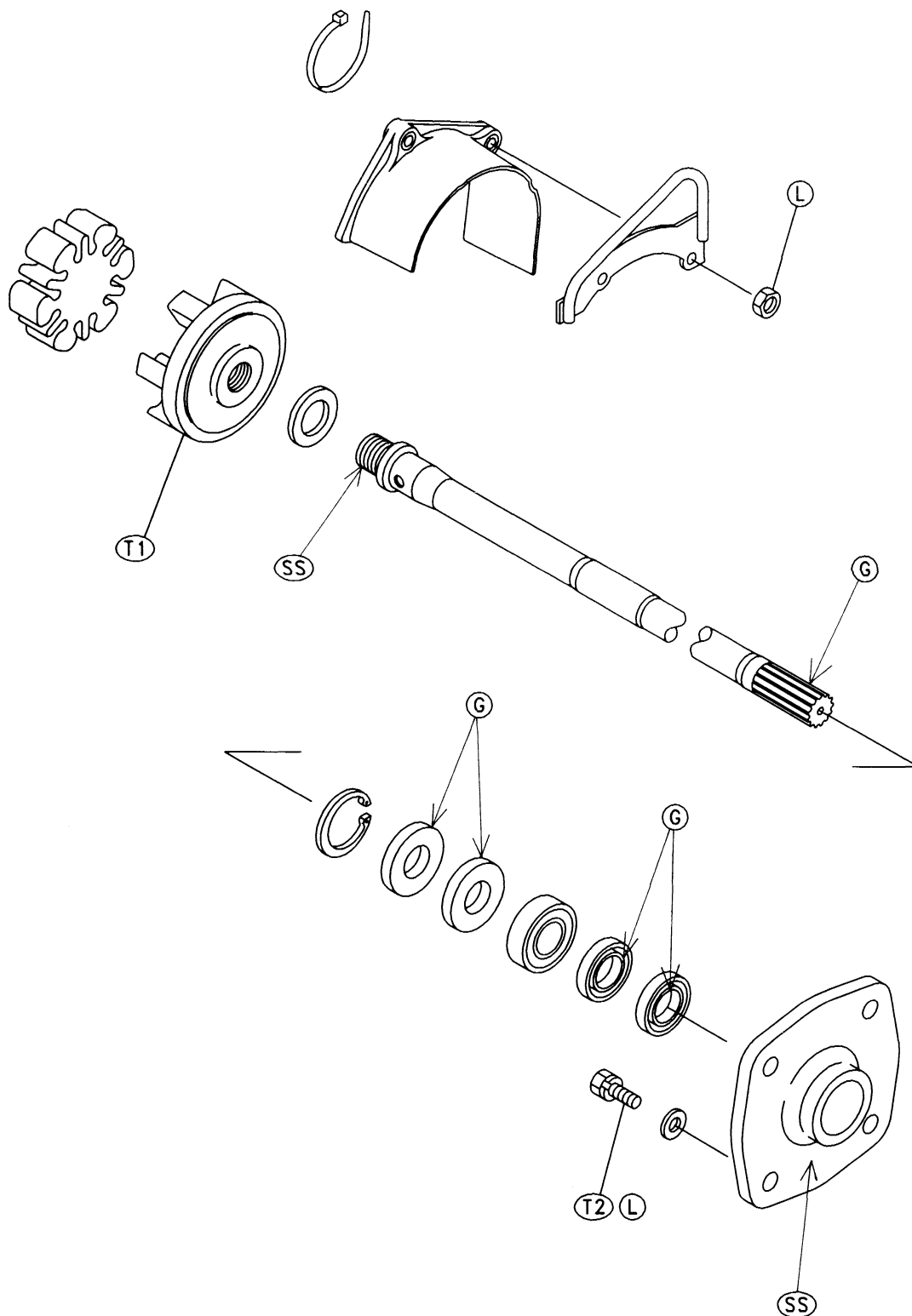
 Drive Shaft Runout*

* = Base Manual

9-2 DRIVE SYSTEM

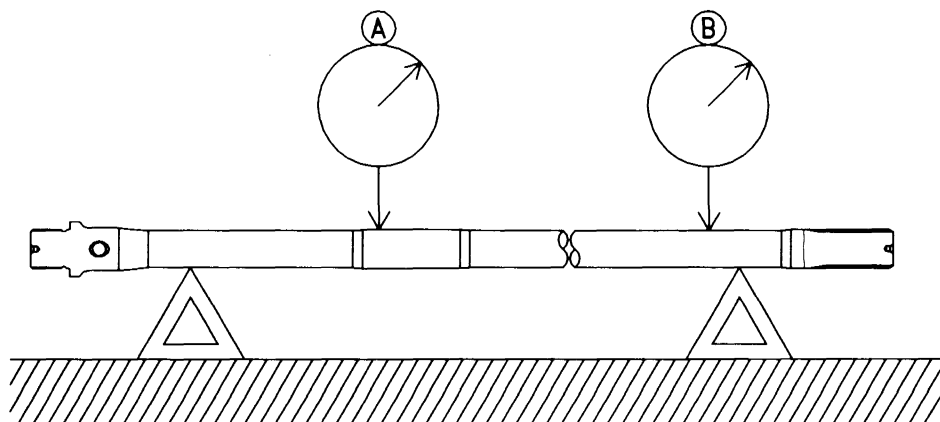
Exploded View

- T1: 39 N-m (4.0 kg-m, 29 ft-lb)
T2: 22 N-m (2.2 kg-m, 16.0 ft-lb)
L: Apply a non-permanent locking agent.
G: Apply grease.
SS: Apply silicone sealant.



Specifications

Item	Standard	Service Limit
Drive Shaft: Runout	[A] less than 0.1 mm [B] less than 0.2 mm	0.2 mm 0.6 mm



Special Tools – Coupling Holder: 57001-1230
 Drive Shaft Holder: 57001-1327
 Drive Shaft Holder Adapter: 57001-1231
 Bearing Driver Set: 57001-1129

Sealant – Kawasaki Bond (Silicone Sealant): 56019-120

Pump and Impeller

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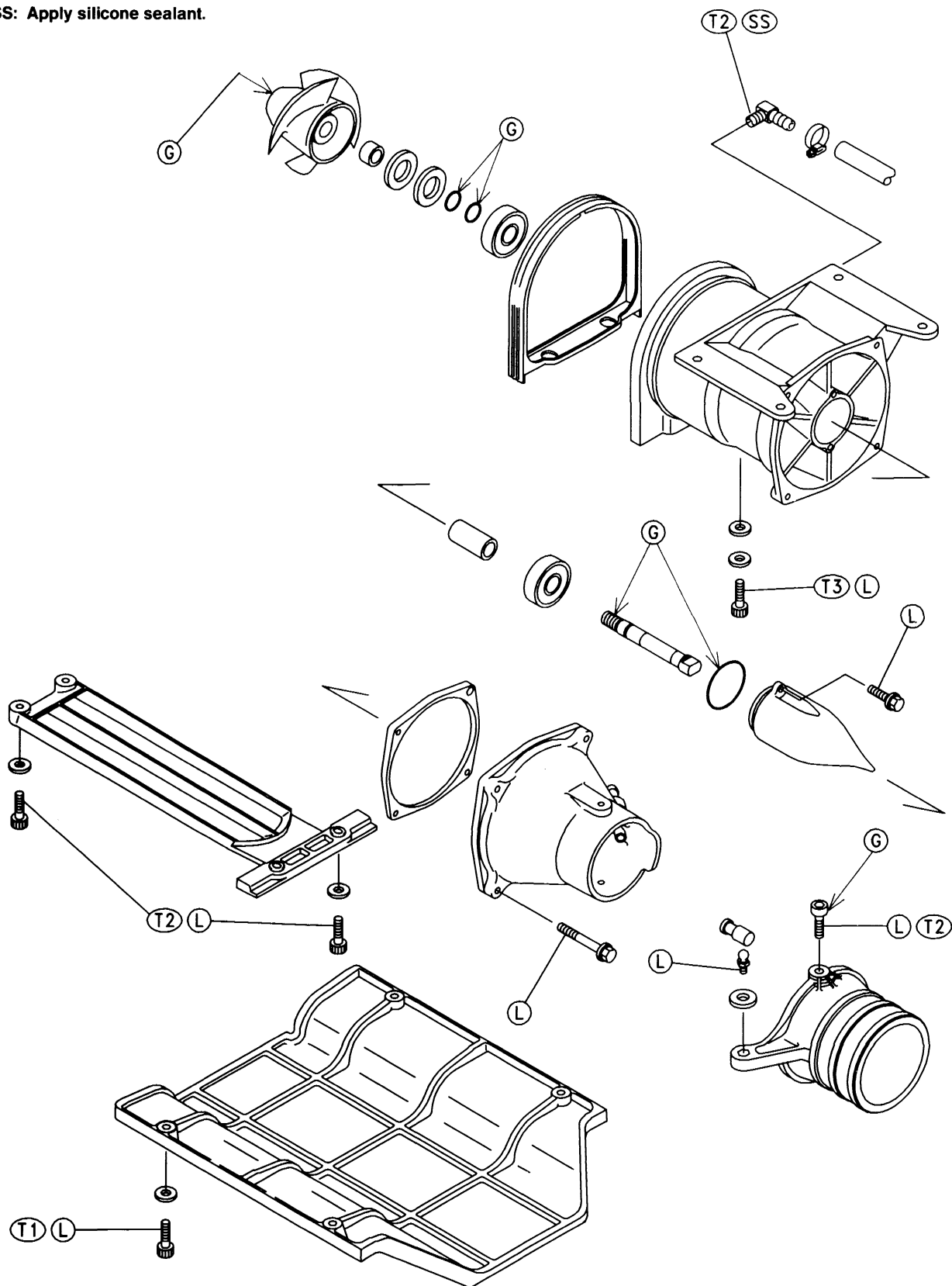
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Impeller Clearance	*

* = Base Manual

Exploded View

SS: Apply silicone sealant.

L: Apply a non-permanent locking agent.



Specifications

Item	Standard	Service Limit
Jet Pump:		
Impeller Outside Diameter	139.5 ~ 139.6 mm	138.5 mm
Pump Case Inside Diameter	140.0 ~ 140.1 mm	141.1 mm
Impeller Clearance	0.2 ~ 0.3 mm	0.6 mm

Special Tools – Impeller Wrench: 57001-1228
Oil Seal & Bearing Remover: 57001-1058
Bearing Driver Set: 57001-1129

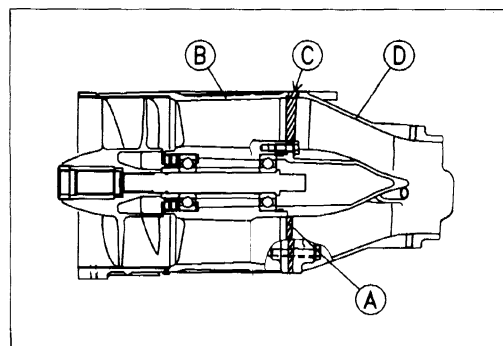
Sealant – Kawasaki Bond (Silicone Sealant): 56019-120

10-4 PUMP AND IMPELLER

Pump and Impeller

Pump Assembly

- Put the spacer [A] on the pump case [B] so that its thicker side [C] faces upward.
- Install the pump outlet [D].



Handle Pole and Handlebar

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Handlebar Installation Notes	*
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Handle Pole and Bracket	*
Removal	*
Installation Notes	*

* = Base Manual

11-2 HANDLE POLE AND HANDLEBAR

Exploded View

L: Apply a non-permanent locking agent.

SS: Apply silicone sealant.

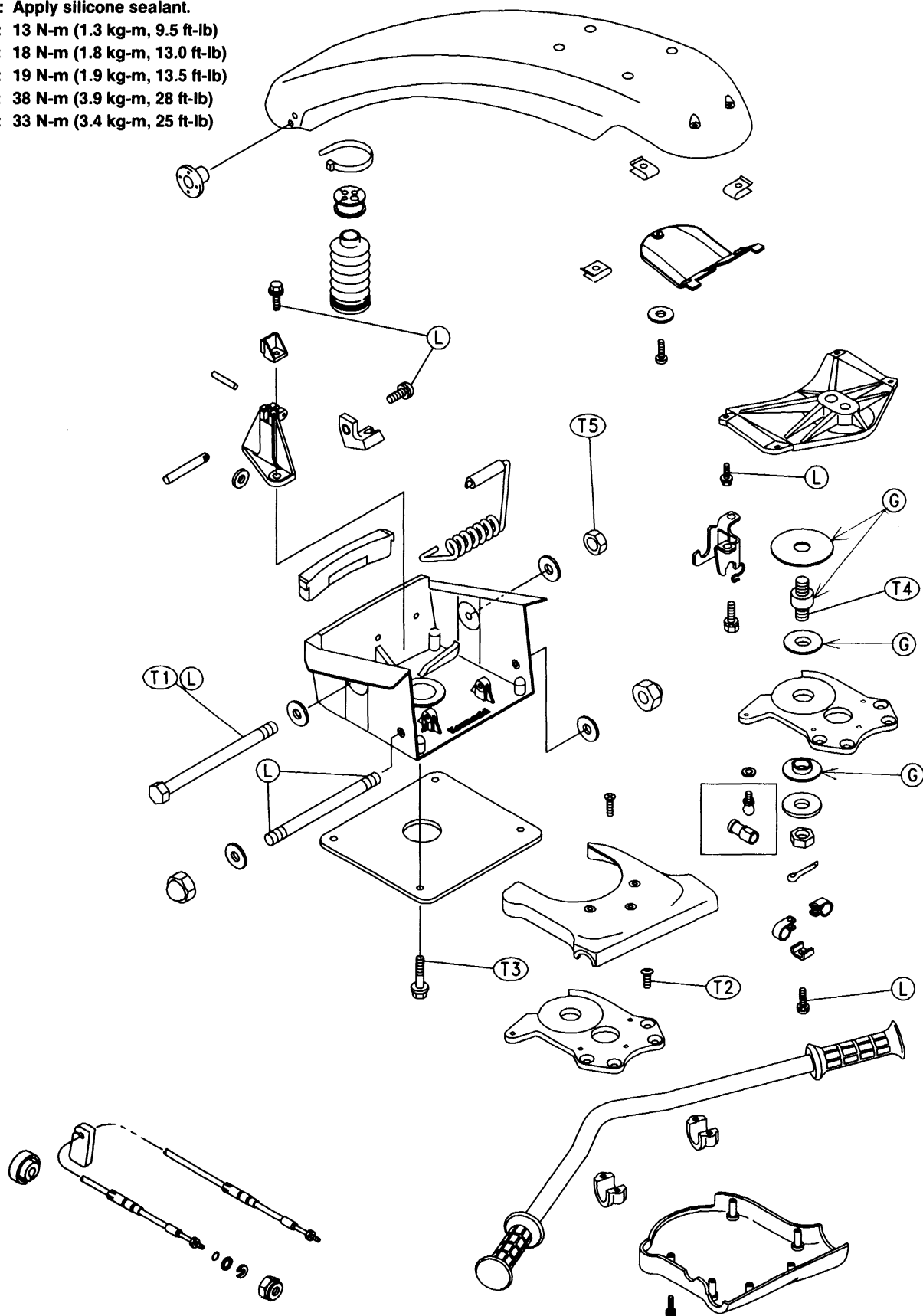
T1: 13 N-m (1.3 kg-m, 9.5 ft-lb)

T2: 18 N-m (1.8 kg-m, 13.0 ft-lb)

T3: 19 N-m (1.9 kg-m, 13.5 ft-lb)

T4: 38 N-m (3.9 kg-m, 28 ft-lb)

T5: 33 N-m (3.4 kg-m, 25 ft-lb)



Hull/Engine Hood

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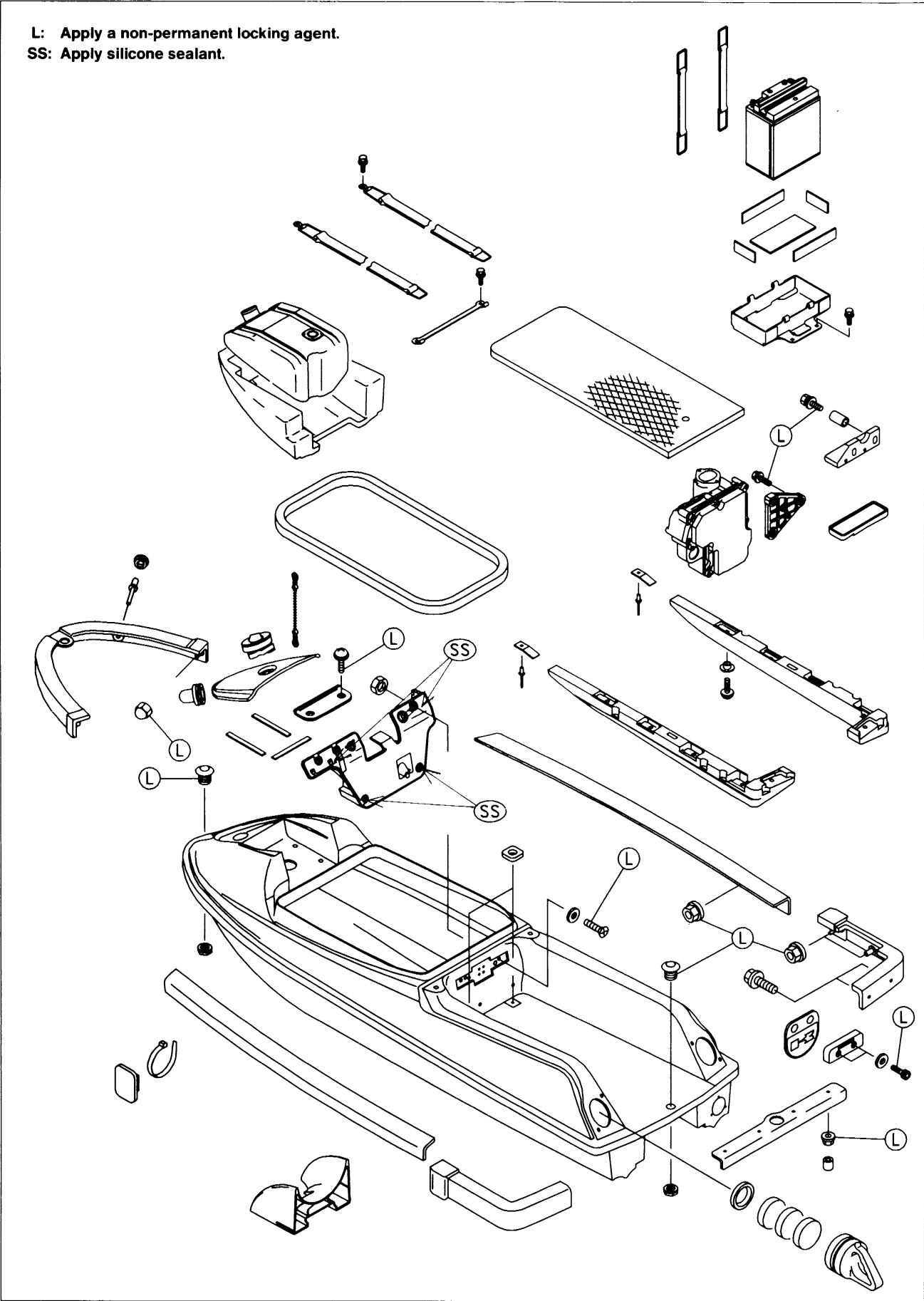
 Stabilizer Removal/Installation Notes12-4

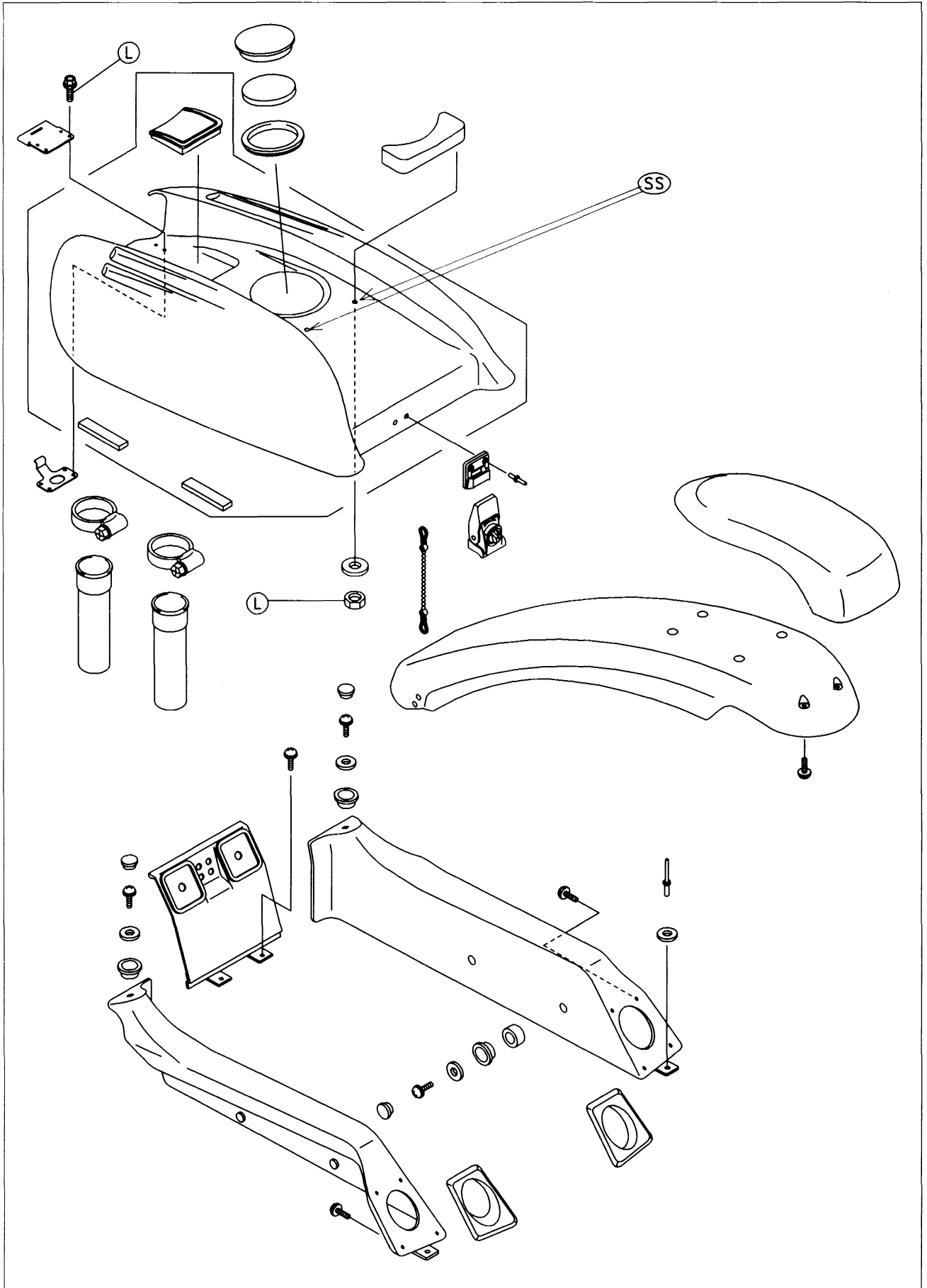
* = Base Manual

12-2 HULL/ENGINE HOOD

Exploded View

L: Apply a non-permanent locking agent.
SS: Apply silicone sealant.



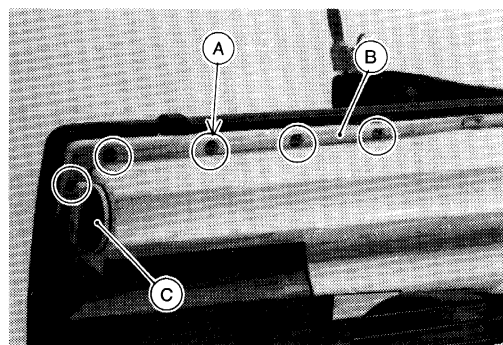


12-4 HULL/ENGINE HOOD

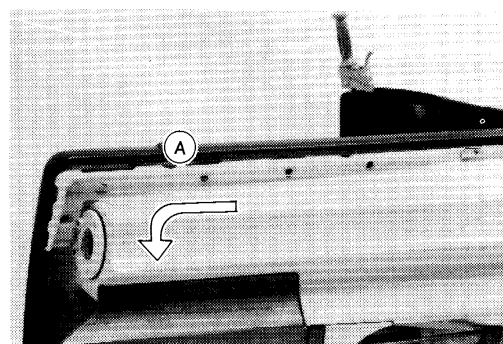
Fittings

Stabilizer Removal/Installation Notes

- Unscrew the stabilizer mounting screws [A].
- To remove the right stabilizer [B], remove the reed valve [C] first.



- Pull off [A] the stabilizer.



Electrical System

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Armature Inspection	*		
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Ignition Coil Installation Note	*		
Ignition Coil Inspection	*		
CDI Igniter Removal	*		
CDI Igniter Installation Notes	*		

* = Base Manual

13-2 ELECTRICAL SYSTEM

Exploded View

1. 10A Fuse

2. CDI Igniter

3. Ignition Coil

4. Starter Relay

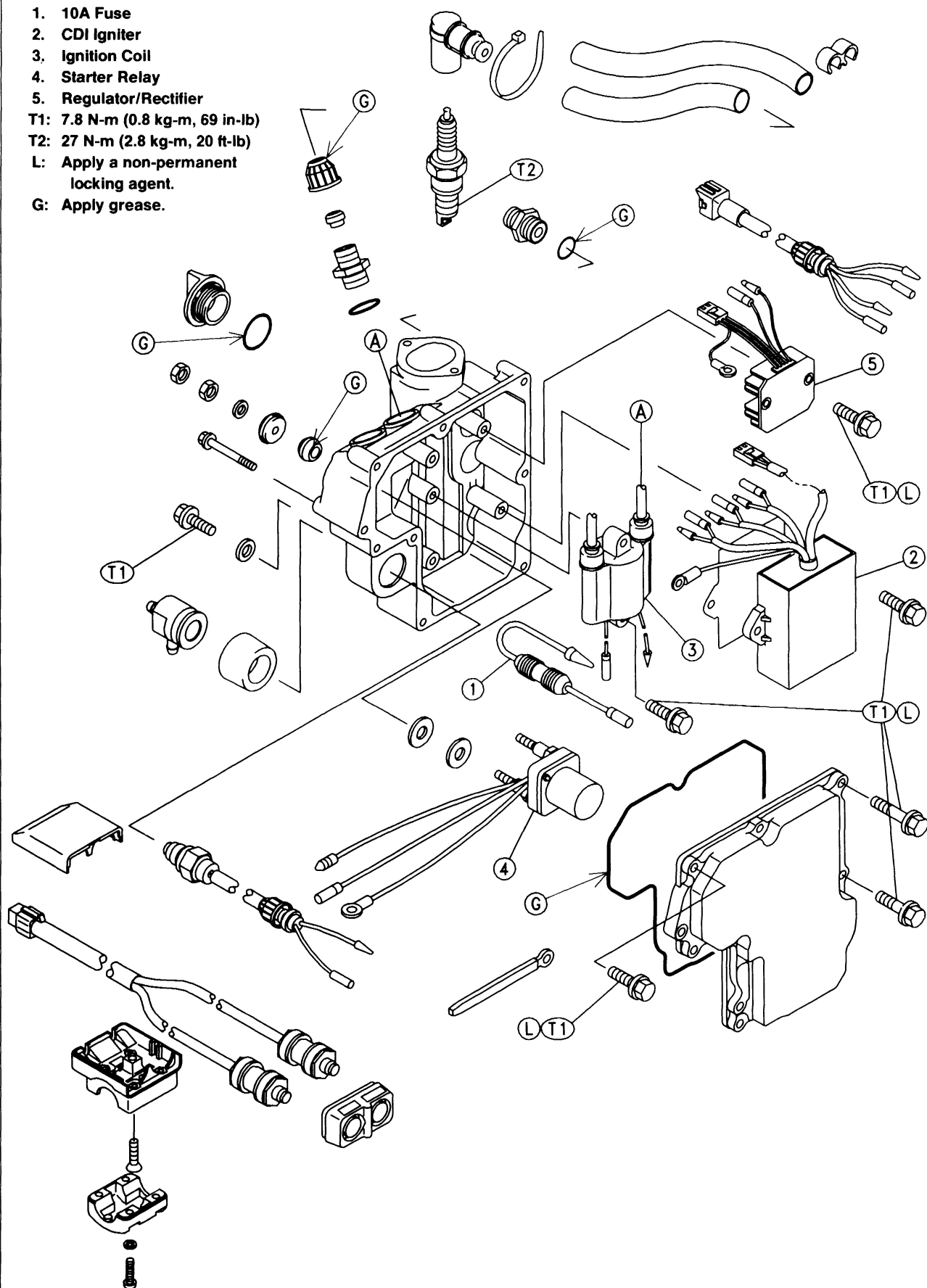
5. Regulator/Rectifier

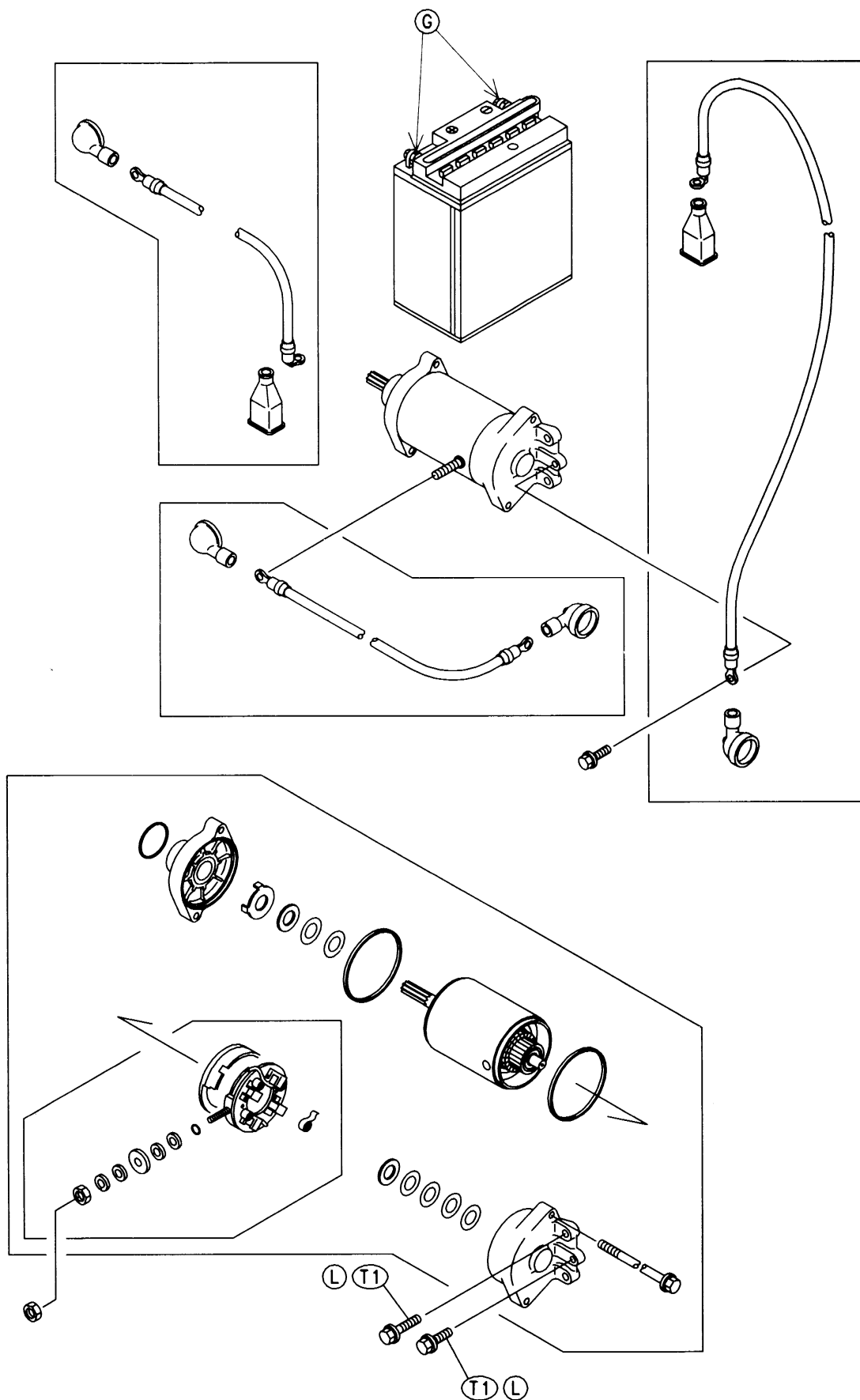
T1: 7.8 N-m (0.8 kg-m, 69 in-lb)

T2: 27 N-m (2.8 kg-m, 20 ft-lb)

L: Apply a non-permanent locking agent.

G: Apply grease.





13-4 ELECTRICAL SYSTEM

Specifications

Item	Standard	Service Limit
Battery: Type	12 V 18 Ah	---
Electric Starter System: Starter motor: Brush length Commutator diameter	 12.5 mm 28 mm	 6.5 mm 27 mm
Charging System: Regulator/rectifier output voltage Charging coil output voltage Charging coil resistance: Brown ← → Brown	 Battery voltage – 14.5 ±05 V 20 V 0.7 ~ 1.1 Ω	 --- --- ---
Ignition System: Ignition timing Ignition coil: Primary winding resistance Secondary winding resistance Exciting coil resistance: Red ← → Red Spark plug: Type Gap Terminal Pickup coil resistance Pickup coil air gap (Clearance between the rotor projection and pickup core)	 13° BTDC @1,250 r/min (rpm) ~ 20.2° @4,000 r/min (rpm) 0.08 ~ 0.1 Ω 3.5 ~ 4.7 kΩ 266 ~ 398 Ω NGK BR8ES 0.7 ~ 0.8 mm Solid Post 396 ~ 594 Ω 0.8 ~ 1.0 mm	 --- --- --- --- --- --- --- --- ---
Start/Stop Switch: Start button: Released Depressed Stop button: Released Depressed	 ∞Ω Almost 0Ω ∞Ω Almost 0Ω	 --- --- --- ---

Special Tool – Hand Tester: 57001-1394

Battery

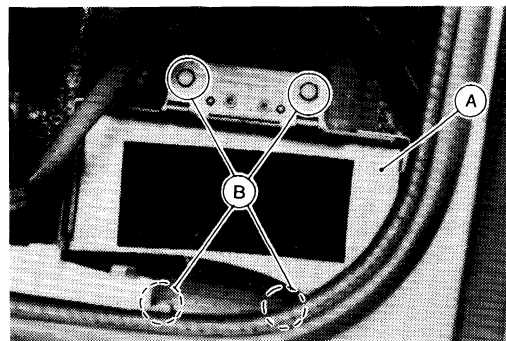
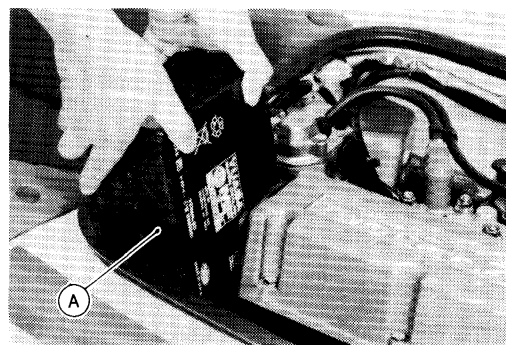
Removal

- Disconnect the battery cables.

⚠ WARNING

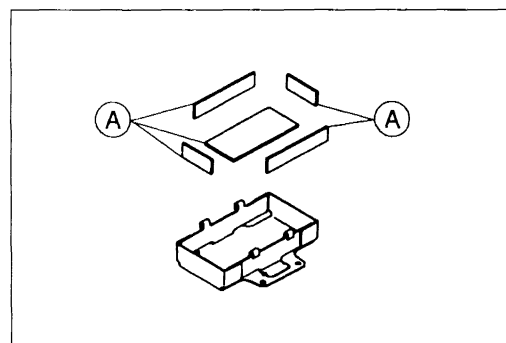
To prevent possible personal injury and damage to electrical components, always disconnect the grounded cable first.

- Unhook the battery straps.
- Take out the battery [A].
- To remove the battery mounting plate [A], remove the mounting bolts [B].



Installation

- Be sure the battery damper [A] is in position in the battery compartment.
- Place the battery in position.
- Hook the battery straps.
- Connect the battery cables, positive first.
- After attaching both cables, coat the terminals and cable ends with grease to prevent corrosion.
- Slide the protective boot over each terminal.



Charging Condition Inspection

Battery charging condition can be checked by measuring battery terminal voltage.

- Disconnect the battery terminal leads.

CAUTION

Be sure to disconnect the negative terminal lead first.

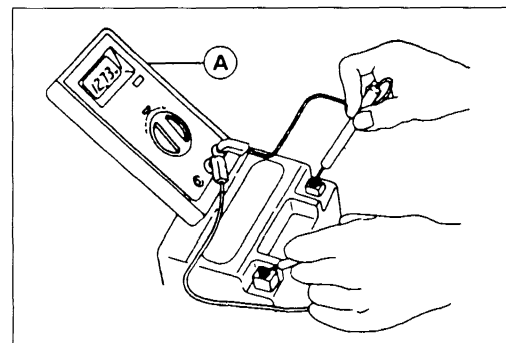
- Measure the battery terminal voltage.

NOTE

- Measure with a digital voltmeter [A] which can be read to one decimal place voltage.
- ★ If the reading is below the specified, refreshing charge is required.

Battery Terminal Voltage

Standard: 12.8 V or more



13-6 ELECTRICAL SYSTEM

Refreshing Charge

- Remove the battery [A].
- Refresh-charge by following method according to the battery terminal voltage.

CAUTION

This battery is sealed type. Never remove sealing caps [B] even at charging. Never add water. Charge with current and time as stated below.

- Terminal Voltage: 11.5 ~ 12.8 V or less

Standard Charge: 1.8 A x 5 ~ 10 h (see following chart)

Quick Charge: 9.0 x 1.0 h

CAUTION

If possible, do not quick charge. If the quick charge is done due to unavoidable circumstances, do standard charge later on.

- Terminal Voltage: 11.5 V or less

Charging Method: 1.8 A x 20 h

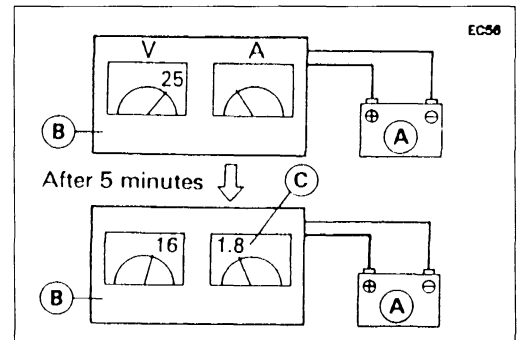
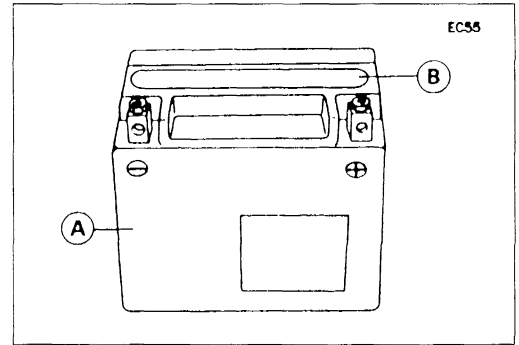
NOTE

- Raise the voltage initially (25 V as maximum), and charge for about 5 minutes as a yardstick. (If ammeter shows no change in current after 5 minutes, you need a new battery.) The current, if it can flow into the battery, tends to become excessive. Adjust the voltage as often as possible to keep the current at standard value (1.8 A).

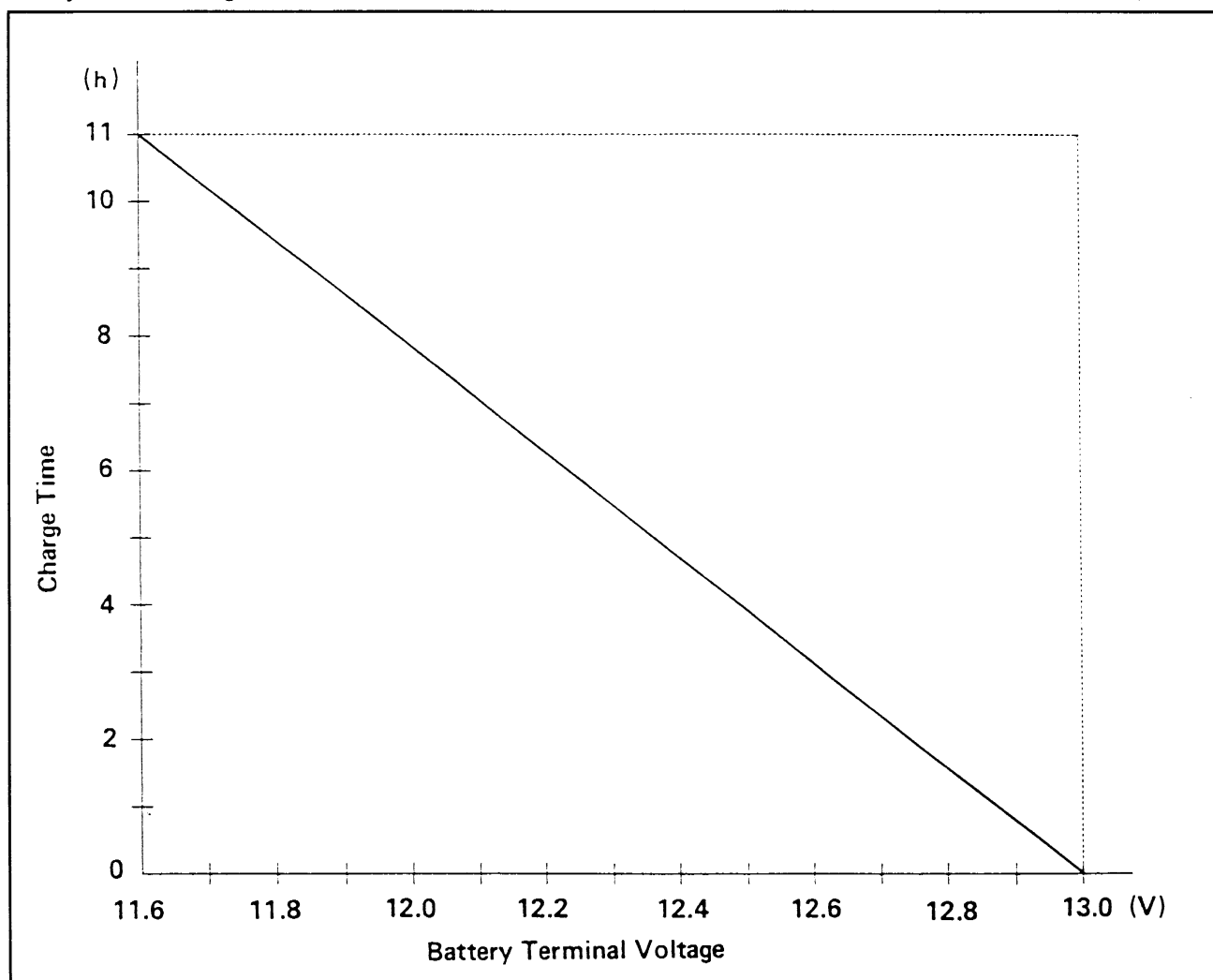
Battery [A]

Battery Charger [B]

Standard Valve [C]



Battery Standard Charge Time Chart – For Reference



- Determine battery condition after refreshing charge.
- Determine the condition of the battery 30 minutes after completion of the charge by measuring the terminal voltage according to the table below.

Criteria	Judgement
12.8 V or higher	Good
12.0 less than 12.8 V	Charge insufficient ← Recharge.
less than 12.0 V	Unserviceable ← Replace

13-8 ELECTRICAL SYSTEM

Ignition System

CDI Igniter Inspection

- Remove the CDI igniter.
- Set the hand tester to the x 1 k Ω range, zero it, and mark the measurements shown in the table.
- ★ If the tester readings are not as specified, replace the CDI igniter.

Special Tool – Hand Tester: 57001-1394

CAUTION

Use only Hand Tester (special tool: 57001-1394) for this test. A multi-meter other than the Kawasaki Hand Tester may show different readings.

If a megger or a meter with a large-capacity battery is used, the CDI igniter will be damaged.

CDI Igniter Internal Resistance

Unit: k Ω

Tester (+) Lead Connection											
Lead Color	O	BK/W	BL	G	R	PU	R/Y	BK/Y	W	BK	BK/BL
O	–	2~4	2~4	12~22	6~18	6~18	20~110	2~4	∞	2~4	2~4
BK/W	∞	–	0	6~13	2~5	2~5	1~28	0	∞	0	0
BL	∞	0	–	6~13	2~5	2~5	1~28	0	∞	0	0
(-)* G	∞	6~12	6~12	–	11~22	11~22	15~50	6~12	∞	6~12	6~12
R	∞	20~60	20~60	20~60	–	50~150	30~200	20~60	∞	20~60	20~60
PU	∞	120~240	120~240	120~240	150~500	–	150~600	100~200	∞	150~300	150~300
R/Y	∞	∞	∞	∞	∞	∞	–	∞	∞	∞	∞
BK/Y	∞	0	0	6~13	2~5	2~5	8~25	–	∞	0	0
W	∞	10~30	10~30	25~70	30~300	30~300	80~600	10~30	–	10~30	10~30
BK	∞	0	0	6~13	2~5	2~5	8~25	0	∞	–	0
BK/BL	∞	0	0	6~13	2~5	2~5	8~25	0	∞	0	–

(-)* : Tester (-) Lead Connection

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* = Base Manual

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MODEL APPLICATION

Year	Model	Beginning Hull No.
1998	JS750-C1	KAW00001□798

□ : This digit in the hull number changes from one machine to another.



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