

**can-am**™



**2008**

**Shop Manual**

**2007 / 2008**

**OUTLANDER™ Series**  
**500/650/800**

**RENEGADE™ Series**  
**500/800**

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## SAFETY NOTICE

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# SAFETY NOTICE

This manual has been prepared as a guide to correctly service and repair 2008 Can-Am ATVs as describe in the model list in the *INTRODUCTION*.

This edition was primarily published to be used by mechanical technicians who are already familiar with all service procedures relating to BRP products. Mechanical technicians should attend training courses given by B.R.P.T.I.

Please note that the instructions will apply only if proper hand tools and special service tools are used.

It is understood that this manual may be translated into another language. In the event of any discrepancy, the English version shall prevail.

The content depicts parts and/or procedures applicable to the particular product at time of writing. Service and Warranty Bulletins may be published to update the content of this manual. Make sure to read and understand these. It does not include dealer modifications, whether authorized or not by BRP, after manufacturing the product.

In addition, the sole purpose of the illustrations throughout the manual, is to assist identification of the general configuration of the parts. They are not to be interpreted as technical drawings or exact replicas of the parts.

The use of BRP parts is most strongly recommended when considering replacement of any component. Dealer and/or distributor assistance should be sought in case of doubt.

The engines and the corresponding components identified in this document should not be utilized on product(s) other than those for which it was designed.

### **WARNING**

Unless otherwise specified, engine should be turned OFF and cold for all maintenance and repair procedures.

This manual emphasizes particular information denoted by the wording and symbols:

### **WARNING**

Identifies an instruction which, if not followed, could cause serious personal injury including possibility of death.

**CAUTION:** Denotes an instruction which, if not followed, could severely damage vehicle components.

**NOTE:** Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, your understanding of the information will promote its correct use. Always use common shop safety practice.

BRP disclaims liability for all damages and/or injuries resulting from the improper use of the contents. We strongly recommend that any services be carried out and/or verified by a highly skilled professional mechanic. It is understood that certain modifications may render use of the vehicle illegal under existing federal, provincial and state regulations.

# INTRODUCTION

## GENERAL INFORMATION

This shop manual covers the following BRP made 2008 Can-Am ATVs.

MODEL	COLOR	ENGINE	MODEL NUMBER
Outlander 500	Green, Red, Yellow	V490	2T8A, 2T8C, 2T8D, 2T8E, 2T8F
Outlander 500 XT	Camo, Green, Red, Yellow	V490	2U8A, 2U8B, 2U8C, 2U8D
Outlander MAX 500	Red	V490	2W8C
Outlander MAX 500 XT	Green, Red, Yellow	V490	2X8A, 2X8B, 2X8C, 2X8D
Outlander 650	Green, Red, Yellow	V660	2N8A, 2N8C, 2N8E, 2N8F, 2N8H, 2N8J
Outlander 650 XT	Camo, Green, Red, Yellow	V660	2P8A, 2P8B, 2P8C, 2P8D, 2P8E, 2P8F
Outlander MAX 650	Green, Red, Yellow	V660	2R8A, 2R8C, 2R8D, 2R8E, 2R8F, 2R8G, 2R8H
Outlander MAX 650 XT	Camo, Green, Red, Yellow	V660	2S8A, 2S8B, 2S8C, 2S8D, 2S8E, 2S8F
Outlander 800	Green, Red, Yellow	V810	2H8A, 2H8C, 2H8E, 2H8F, 2H8H, 2H8J
Outlander 800 XT	Camo, Green, Red, Yellow	V810	2J8A, 2J8B, 2J8C, 2J8D, 2J8E, 2J8F
Outlander Max 800	Green, Red, Yellow Steel Gray Metallic	V810	2K8A, 2K8C, 2K8D, 2K8E, 2K8F, 2K8G, 2K8H
Outlander MAX 800 XT	Camo, Green, Red, Yellow	V810	2L8A, 2L8B, 2L8C, 2L8D, 2L7E, 2L8F, 2L8G
Outlander MAX 800 Ltd	Steel Gray Metallic	V810	2M8A, 2M8B, 2M8C
Renegade 500	Yellow	V490	4E8A, 4E8B, 4E8C
Renegade 800	Yellow	V810	4B8A, 4B8B, 4B8C

# INTRODUCTION

The information and component/system descriptions contained in this manual are correct at time of writing. BRP however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured.

Due to late changes, there may be some differences between the manufactured product and the description and/or specifications in this document.

BRP reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

## VEHICLE INFORMATION

### Model Number



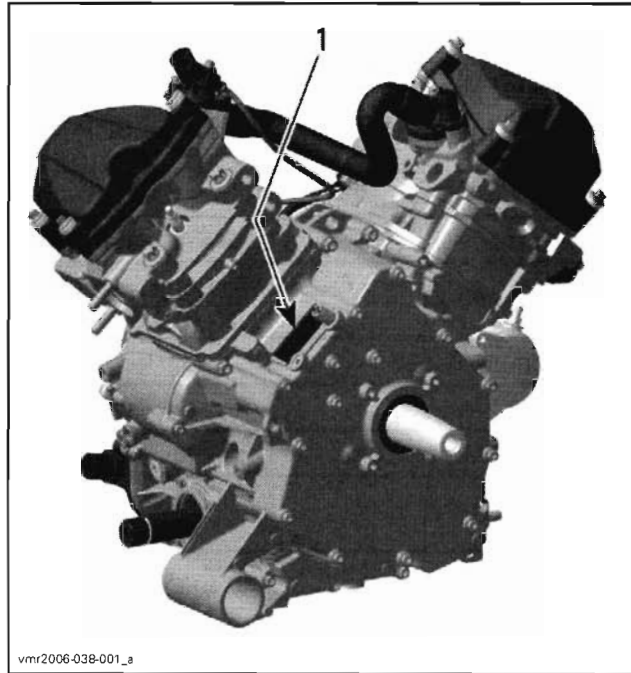
TYPICAL — VEHICLE IDENTIFICATION NUMBER LABEL  
1. Model number

### Vehicle Identification Number (V.I.N.)



TYPICAL  
1. V.I.N. (Vehicle Identification Number)

### Engine Identification Number (E.I.N.)



1. Engine Identification Number (E.I.N.)

## ENGINE EMISSIONS INFORMATION

### Manufacturer's Responsibility

Manufacturers of ATVs engines must determine the exhaust emission levels for each engine horsepower family and certify these engines with the United States of America Environmental Protection Agency (EPA). An emissions control information label, showing emission levels and engine specifications, must be placed on each vehicle at the time of manufacture.

### Dealer Responsibility

When performing service on ATVs that carry an emissions control information label, adjustments must be kept within published factory specifications.

Replacement or repair of any emission related component must be executed in a manner that maintains emission levels within the prescribed certification standards.

Dealers are not to modify the engine in any manner that would alter the horsepower or allow emission levels to exceed their predetermined factory specifications.

Exceptions include manufacturer's prescribed changes, such as altitude adjustments for example.

**Owner Responsibility**

The owner/operator is required to have engine maintenance performed to maintain emission levels within prescribed certification standards.

The owner/operator is not to, and should not allow anyone to modify the engine in any manner that would alter the horsepower or allow emissions levels to exceed their predetermined factory specifications.

**EPA Emission Regulations**

Some ATVs manufactured by BRP are certified to the EPA as conforming to the requirements of the regulations for the control of air pollution from new ATV engines. This certification is contingent on certain adjustments being set to factory standards. For this reason, the factory procedure for servicing the product must be strictly followed and, whenever practicable, returned to the original intent of the design.

The responsibilities listed above are general and in no way a complete listing of the rules and regulations pertaining to the EPA requirements on exhaust emissions for ATVs products. For more detailed information on this subject, you may contact the following locations:

**FOR ALL COURIER SERVICES:**

U.S. Environmental Protection Agency  
Office of Transportation and Air Quality  
1310 L Street NW  
Washington D.C. 20005

**REGULAR US POSTAL MAIL:**

1200 Pennsylvania Ave. NW  
Mail Code 6403J  
Washington D.C. 20460

**INTERNET:** <http://www.epa.gov/otaq/>

**E-MAIL:** [otaqpublicweb@epa.gov](mailto:otaqpublicweb@epa.gov)

**SELF-LOCKING FASTENERS PROCEDURE**

The following describes the most common application procedures when working with self-locking fasteners.

Use a metal brush or a screw tap to clean the hole properly then use a solvent, let act during 30 minutes and wipe off. The solvent utilization is to ensure the adhesive works properly.

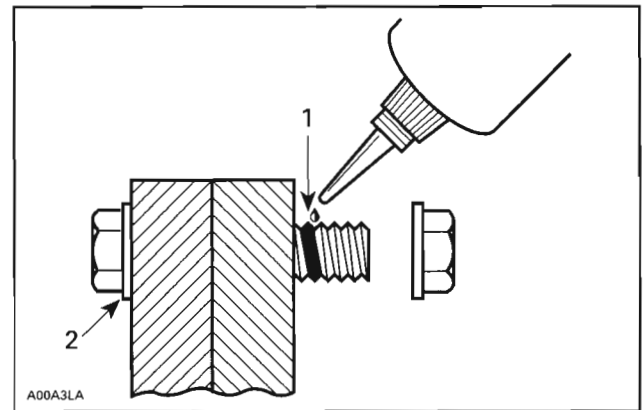
**LOCTITE® APPLICATION PROCEDURE**

The following describes the most common application procedures when working with Loctite products.

**NOTE:** Always use proper strength Loctite product as recommended in this manual.

**Threadlocker**

**Uncovered Holes (bolts and nuts)**



- 1. Apply here
- 2. Do not apply

Clean threads (bolt and nut) with solvent. Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.

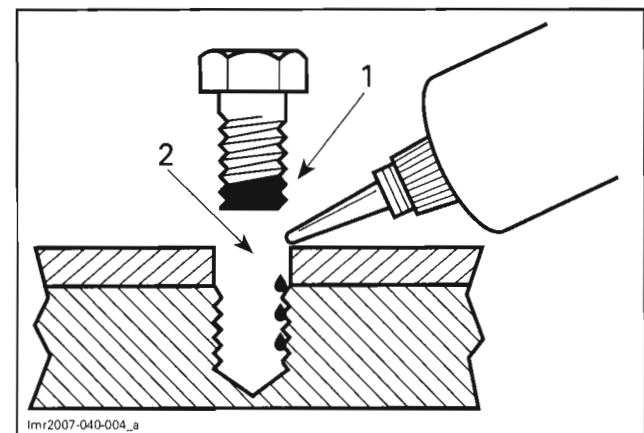
Choose proper strength Loctite threadlocker.

Fit bolt in the hole.

Apply a few drops of threadlocker at proposed tightened nut engagement area.

Position nut and tighten as required.

**Blind Holes**



- 1. On screw threads
- 2. On hole threads

# INTRODUCTION

Clean threads (screw and hole) with solvent.

Apply Loctite Primer N (P/N 293 800 041) on threads (screw and nut) and allow to dry for 30 seconds.

Choose proper strength Loctite threadlocker.

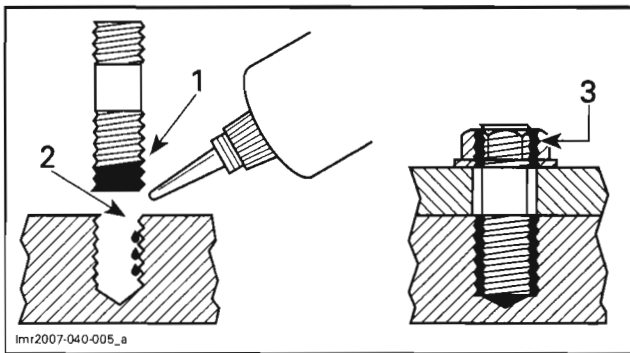
Apply 2 or 3 drops along the threaded hole.

**NOTE:** To avoid a hydro lock situation, do not apply too much Loctite.

Apply several drops on screw threads.

Tighten as required.

## Stud in Blind Holes



1. On stud threads
2. On hole threads
3. Onto nut threads

Clean threads (stud and hole) with solvent.

Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.

Put 2 or 3 drops of proper strength Loctite threadlocker along the threaded hole.

**NOTE:** To avoid a hydro lock situation, do not apply too much Loctite.

Apply several drops of proper strength Loctite on stud threads.

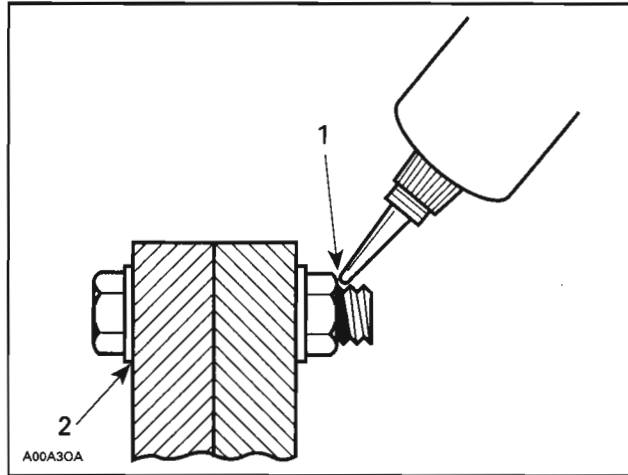
Install stud.

Install cover, etc.

Apply drops of proper strength Loctite on uncovered threads.

Tighten nuts as required.

## Preassembled Parts



1. Apply here
2. Do not apply

Clean bolts and nuts with solvent.

Assemble components.

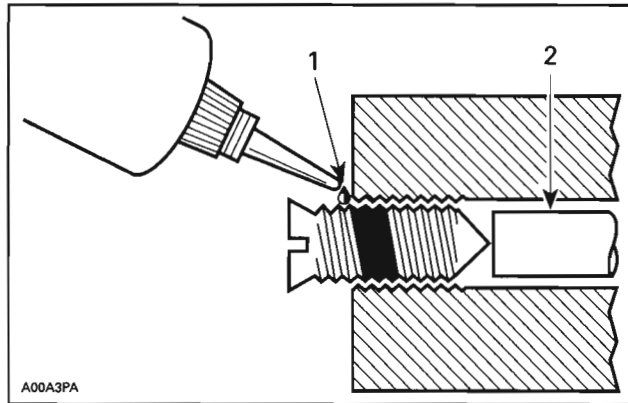
Tighten nuts.

Apply drops of proper strength Loctite on bolt/nut contact surfaces.

Avoid touching metal with tip of flask.

**NOTE:** For preventive maintenance on existing equipment, retighten nuts and apply proper strength Loctite on bolt/nut contact surfaces.

## Adjusting Screw



1. Apply here
2. Plunger

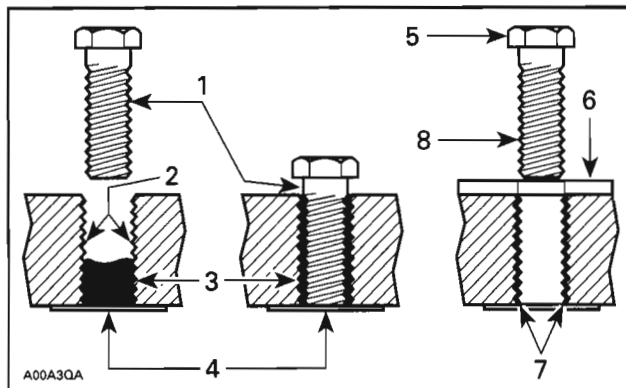
Adjust screw to proper setting.

Apply drops of proper strength Loctite threadlocker on screw/body contact surfaces.

Avoid touching metal with tip of flask.

**NOTE:** if it is difficult to readjust, heat screw with a soldering iron (232°C (450°F)).

## Stripped Thread Repair



1. Release agent
2. Stripped threads
3. Form-A-Thread
4. Tape
5. Cleaned bolt
6. Plate
7. New threads
8. Threadlocker

## Standard Thread Repair

Follow instructions on Loctite FORM-A-THREAD 81668 package.

If a plate is used to align bolt:

- Apply release agent on mating surfaces.
- Put waxed paper or similar film on the surfaces.

Twist bolt when inserting it to improve thread conformation.

**NOTE:** NOT intended for engine stud repairs.

## Repair of Small Holes/Fine Threads

**Option 1:** Enlarge damaged hole, then follow *STANDARD THREAD REPAIR* procedure.

**Option 2:** Apply FORM-A-THREAD on the screw and insert in damaged hole.

## Permanent Stud Installation (light duty)

Use a stud or thread on desired length.

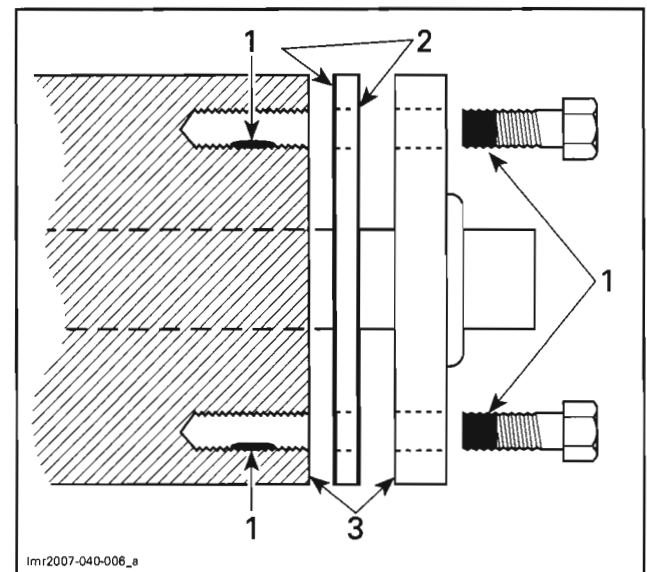
DO NOT apply release agent on stud.

Do a *STANDARD THREAD REPAIR*.

Allow to cure for 30 minutes.

Assemble.

## Gasket Compound



1. Proper strength Loctite
2. Loctite Primer N (P/N 293 800 041) and Loctite 518 (P/N 293 800 038) on both sides of gasket
3. Loctite Primer N only

Remove old gasket and other contaminants with Loctite Chisel remover (P/N 413 708 500). Use a mechanical mean if necessary.

**NOTE:** Avoid grinding.

Clean both mating surfaces with solvent.

Spray Loctite Primer N on both mating surfaces and on both sides of gasket. Allow to dry 1 or 2 minutes.

Apply Loctite 518 (P/N 293 800 038) on both sides of gasket, using a clean applicator.

Place gasket on mating surfaces and assemble immediately.

**NOTE:** If the cover is bolted to blind holes (above), apply proper strength Loctite on the threads of hole. Tighten.

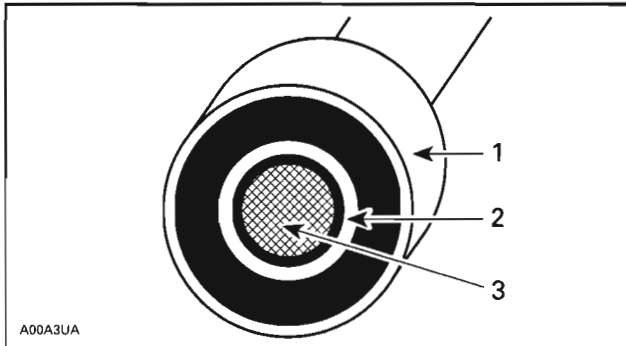
If holes are sunken, apply proper strength Loctite on bolt threads.

Tighten as usual.

# INTRODUCTION

## Mounting on Shaft

### Mounting with a Press



1. Bearing
2. Proper strength Loctite
3. Shaft

Clean shaft external part and element internal part. Apply a strip of proper strength Loctite on shaft circumference at insert or engagement point.

**NOTE:** Retaining compound is always forced out when applied on shaft.

DO NOT use antiseize Loctite or any similar product.

No curing period is required.

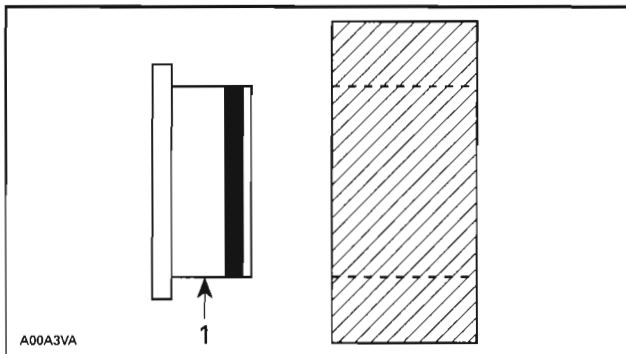
### Mounting in Tandem

Apply retaining compound on internal element bore.

Continue to assemble as shown above.

## Case-In Components

### Metallic Gaskets



1. Proper strength Loctite

Clean inner housing diameter and outer gasket diameter.

Spray housing and gasket with Loctite Primer N (P/N 293 800 041).

Apply a strip of proper strength Loctite on leading edge of outer metallic gasket diameter.

**NOTE:** Any Loctite product can be used here. A low strength liquid is recommended as normal strength and gap are required.

Install according to standard procedure.

Wipe off surplus.

Allow it to cure for 30 minutes.

**NOTE:** Normally used on worn-out housings to prevent leaking or sliding.

It is generally not necessary to remove gasket compound applied on outer gasket diameter.

## TIGHTENING TORQUES

Tighten fasteners to torque mentioned in exploded views and/or text. When they are not specified, refer to following table.

### **⚠ WARNING**

**Torque wrench tightening specifications must strictly be adhered to.**

**Locking devices (e.g.: locking tabs, elastic stop nuts, self-locking fasteners, etc.) must be installed or replaced with new ones, where specified. If the efficiency of a locking device is impaired, it must be renewed.**

In order to avoid a poor assembling, tighten screws, bolts or nuts in accordance with the following procedure:

Manually screw all screws, bolts and/or nuts.

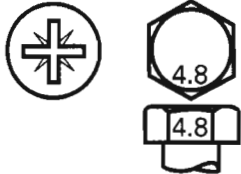



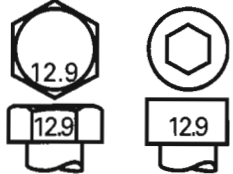




Apply the half of the recommended torque value.

**CAUTION:** Be sure to use the proper tightening torque for the proper strength grade.

**NOTE:** When possible, always apply torque on the nut.

Torque to the recommended torque value.

**NOTE:** Always torque screws, bolts and/or nuts in a criss-cross sequence.

Property class and head markings	<p>4.8</p> 	<p>8.8</p> 	<p>9.8</p> 	<p>10.9</p> 	<p>12.9</p> 
Property class and nut markings	<p>5</p> 	<p>8</p> 	<p>10</p> 	<p>12</p> 	

A00A885

FASTENER SIZE	FASTENER GRADE/TORQUE			
	5.8 Grade	8.8 Grade	10.9 Grade	12.9 Grade
M4	1.5 – 2 N•m (13 – 18 lbf•in)	2.5 – 3 N•m N•m (22 – 27 lbf•in)	3.5 – 4 N•m (31 – 35 lbf•in)	4 – 5 N•m (35 – 44 lbf•in)
M5	3 – 3.5 N•m (27 – 31 lbf•in)	4.5 – 5.5 N•m (40 – 47 lbf•in)	7 – 8.5 N•m (62 – 75 lbf•in)	8 – 10 N•m (71 – 89 lbf•in)
M6	6.5 – 8.5 N•m (58 – 75 lbf•in)	8 – 12 N•m (71 – 106 lbf•in)	10.5 – 15 N•m (93 – 133 lbf•in)	16 N•m (142 lbf•in)
M8	15 N•m (133 lbf•in)	25 N•m (18 lbf•ft)	32 N•m (23 lbf•ft)	40 N•m (30 lbf•ft)
M10	29 N•m (21 lbf•ft)	48 N•m (35 lbf•ft)	61 N•m (45 lbf•ft)	73 N•m (53 lbf•ft)
M12	52 N•m (38 lbf•ft)	85 N•m (63 lbf•ft)	105 N•m (77 lbf•ft)	128 N•m (94 lbf•ft)
M14	85 N•m (63 lbf•ft)	135 N•m (100 lbf•ft)	170 N•m (125 lbf•ft)	200 N•m (148 lbf•ft)

# INTRODUCTION

## MANUAL INFORMATION

The manual is divided into many major sections as you can see in the main table of contents at the beginning of the manual.

Each section is divided in various subsections, and again, each subsection has one or more division.

The illustrations show the typical construction of the different assemblies and, in all cases, may not reproduce the full detail or exact shape of the parts shown, however, they represent parts which have the same or a similar function.

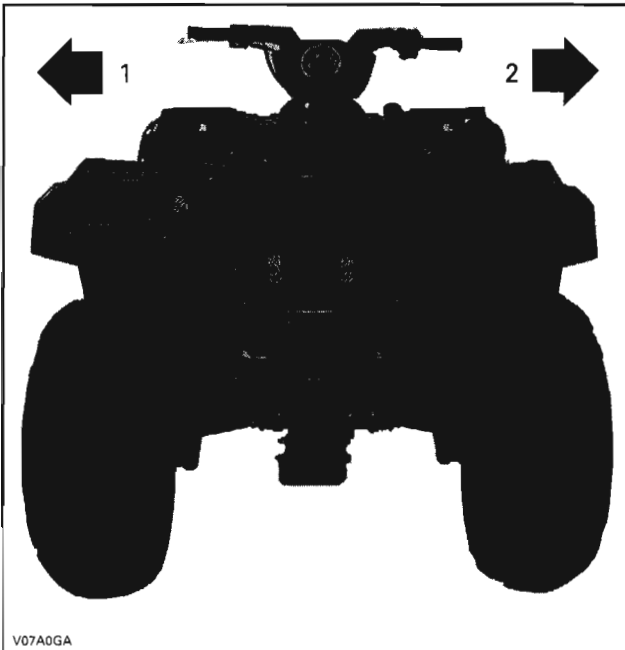
**CAUTION:** Most components in the vehicles are built with parts dimensioned in the metric system. Most fasteners are metric and must not be replaced by customary fasteners or vice-versa. Mismatched or incorrect fasteners could cause damage to the vehicle or possible personal injury.

As many of the procedures in this manual are inter-related, we suggest that before undertaking any task, you read and thoroughly understand the entire section or subsection in which the procedure is contained.

A number of procedures throughout the book require the use of special tools. Before starting any procedure, be sure that you have on hand all required tools, or approved equivalents.

The use of RIGHT and LEFT indications in the text, always refers to the driving position (sitting on the vehicle).

This manual uses technical terms which may be different from the ones of the *PARTS CATALOGS*. When ordering parts always refer to the specific model *PARTS CATALOGS*.



V07A0GA

TYPICAL  
1. Left  
2. Right



**Suggest:**

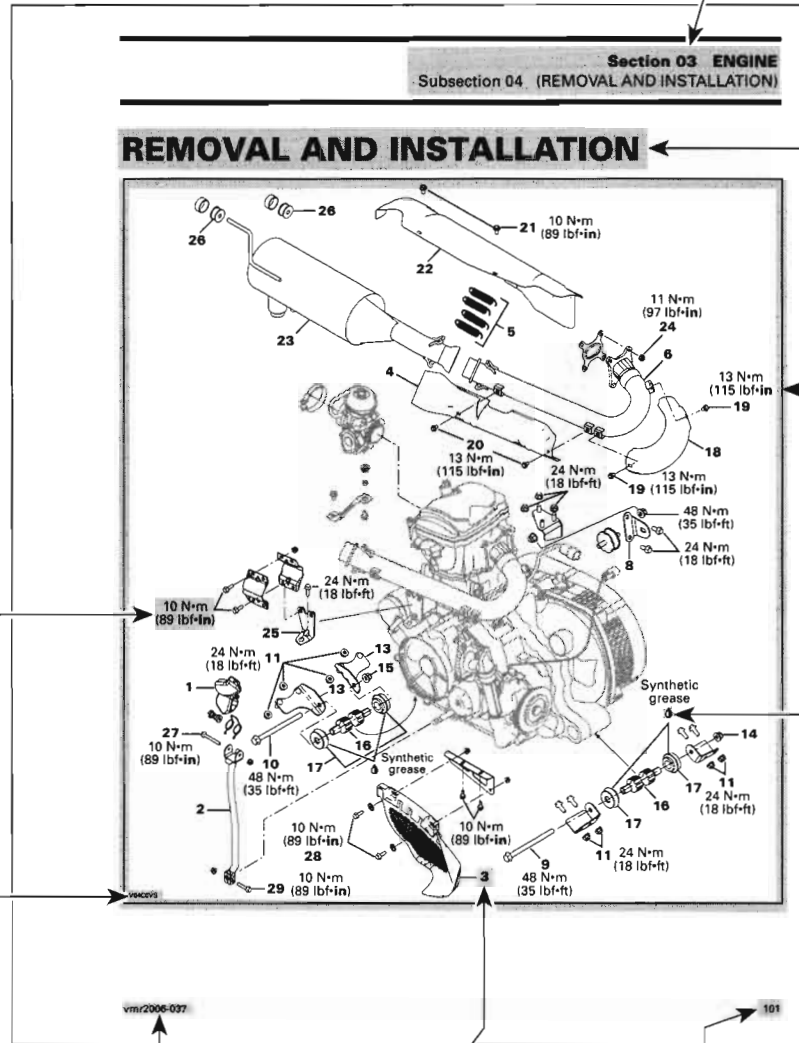
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**Thank you so much for reading**

TYPICAL PAGE



Page heading indicates section and subsection detailed.

Section 03 ENGINE  
Subsection 04 (REMOVAL AND INSTALLATION)

REMOVAL AND INSTALLATION

Subsection title indicates beginning of the subsection.

Exploded view assists you in identifying parts and related positions.

Tightening torque nearby fastener. In this case, nut must be torqued to 10 N·m or 89 lbf·in.  
**CAUTION:** Pay attention to torque specifications. Some of these are in lbf·in instead of lbf·ft. Use appropriate torque wrench.

Drop represents a liquid product to be applied to a surface.

Illustration number for publishing process.

vmr2006-037

Document number for publishing process.

Bold face number indicates special procedure concerning this part.

Page number

101

## TYPICAL PAGE

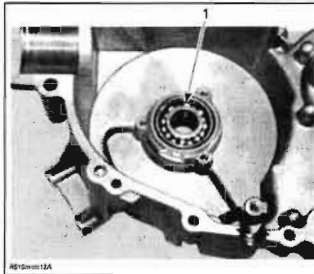
### Section 03 ENGINE Subsection 06 (MAGNETO SYSTEM)

#### **BEARING**

**Inspection**  
Ball bearing no. 10 must rotate freely. Otherwise, replace it.

#### **Removal**

- Heat up the magneto housing cover to about 100°C (212°F) for an easy ball bearing removal.



RE15mm12A  
1. Ball bearing

#### **Installation**

For installation also heat the magneto housing up to about 100°C (212°F) to put ball bearing in place.

Place new ball bearing in freezer for 10 minutes approximately.

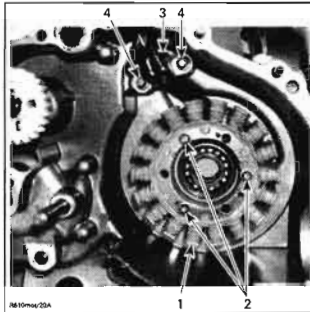
Reinstall other removed parts in the reverse order.

#### **STATOR AND TRIGGER COIL**

#### **Removal**

Remove.

- magneto housing cover no. 7
- screw no. 11 and 12
- stator with trigger coil no. 13.



RE15mm20A  
1. Stator  
2. Stator screws  
3. Trigger coil  
4. Trigger coil screws

#### **Inspection**

Check stator and trigger coil condition. If damaged replace the faulty part.

For electrical inspection, refer to CHARGING SYSTEM for the stator and IGNITION SYSTEM for the trigger coil.

Title indicates main procedure to be carried-out.

Call-outs for above illustration.

Bold face number following part name refers to exploded view at beginning of subsection.

Reference to look up a certain section and subsection. In this case it concerns IGNITION SYSTEM.

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