



# MPEM

## PROGRAMMER

G U I D E



4 8 0 1 4 3 6 0 1

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# INTRODUCTION

This document is to be used as a training supplement to your *shop manual* and *service school materials*. This document will offer you the newest and latest specifications to properly care for and use your MPEM Programmer and vehicle electrical system.

Understanding the MPEM Programmer and its options includes knowing the terms and abbreviations that will be used in the programmer or in the written instructions.

## DESCRIPTION OF TERMS

DESS	Digital Encoded Security System
MPEM	Multi Purpose Electronic Module
INFO	Information
VEH	Vehicle
APOP	Automatic Power Off (Programmer)
PGMR	MPEM Programmer
S#	Serial Number
SR	Number of Soft Reset (Vehicle MPEM)
LCD	Liquid Crystal Display
KEY	Tether Cord Cap

# GENERAL SPECIFICATIONS OF PROGRAMMER

The basic function of the programmer is to open the record option of the snowmobile MPEM memory.

This programmer version is V2.1D.

- Programmer kit P/N: 295 000 127
- It operates on 4 AA Alkaline batteries. The approximate battery life is 10 hours of continuous use.
- The LCD display features 4 lines with 16 characters each.
- Splash proof (not waterproof).
- Twenty key touch pad.
- Internal clock with Day, Month, Year, powered by 10 year lithium battery.
- Re-configurable internal memory (48 kilobytes).
- Boot memory ROM (read only memory) (8 kilobytes).
- RAM memory (random access memory) (2 kilobytes).

Use a damp cloth and mild detergent to clean programmer.



## CAUTION

Never use abrasives or solvents such as acetone or fuel to clean the programmer display or touch pad.

## DESCRIPTION OF DESS SYSTEM

The DESS (Digitally Encoded Security System) is a deterrent against theft. Factory programmed, the tether cord provided with snowmobile is the only one that allows engine to turn more than 2500 RPM. If a wrong tether cord is installed the engine will start but will not reach engagement speed required to move vehicle.

Each tether cord has a small magnet as well as a small micro chip molded into the rubber cap. The magnet will close a primary circuit in the electrical system. This completes the circuit and allows the MPEM to read the electronic number in the tether cord when engine is started.

**NOTE:** We do not program the tether cord! we record the tether cord electronic number into the MPEM memory.

However, for the sake of clarity, we will refer to "key programming" or "tether cord programming" in the following technical information. Each tether cord has its own electronic number.

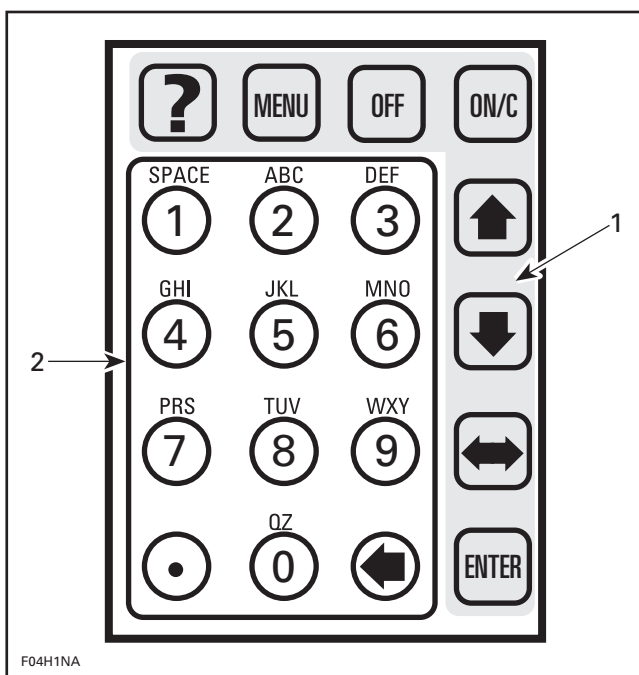
The MPEM also handles data input such as; customer name, delivery date as well as records the hours of vehicle operation.

After engine is started 2 beeps confirm that the MPEM has recognized the tether cord. The vehicle can be driven normally.

Every 3 seconds and DESS pilot lamp blinking at same rate mean that a bad connection has been detected. Vehicle can not be driven.

## KEY PAD

The key pad is sub-divided into 2 main areas; the control key area and the data entry area.



1. Control key area  
2. Data entry area

## CONTROL KEYS



When using this key, it activates the programmer to the **ON** mode. This function quickly transfers to the **PASSWORD** screen.



The **OFF** button will shut off the programmer and close any operating program.

**NOTE:** Prior to pressing the **OFF** key, it is strongly recommended to go back to the main menu. This will warn you of any unfinished commands.



When pressing this button from a secondary display or a sub menu you will go to the previous menu.



This key will offer assistance to whatever menu option the cursor is directed to.

**NOTE:** When pressing this key while the programmer is waiting for a password, it will display the Bombardier support phone and fax numbers for the US, Canada and International. Refer to the last page of document.

You will also see the required information should you need another password.



When these keys are touched the cursor will move up or down. When more than 4 items are listed this will allow you to see them. This will only work for option selections.



When this key is touched the cursor will move left or right, this will be used to select **YES** or **NO**.



This is used when entering data, when touching this key, the cursor will move left erasing the character to the left of the cursor.

**0 to 9** These keys are multi-functional, the first touch will be the number, the second touch will be the first letter, the third touch will be the next letter until all letters are seen. The key then returns to the numbers once again.

If a second letter or number is needed from the same key, touch to move the cursor, then add the next character.

- The dot key will add a dot (.) when entering data.

## COMMUNICATION CABLE

One communication cable; 2 functions (cable is available separately P/N 278 0010 52):

- Updating function, to be used when updating programmer with personal computer.
- MPEM function, to be used to communicate from programmer to MPEM in snowmobile.

The MPEM programmer reads information in the MPEM, then information can be modified by the programmer's operator and transferred to the MPEM.

This basic operation is true for most functions explained in this text.

# PROGRAMMER PREPARATION

## PASSWORD DECAL

Gently peel off password decal from programmer screen. Apply decal on a blank sheet and store in a safe place.

**NOTE:** For security reasons the password should not be kept with the programmer.

## BATTERY INSTALLATION

From backside of programmer, remove the 2 battery cover screws. Lift up cover then install the batteries (included).

### ▼ CAUTION

Ensure that batteries are properly positioned. Refer to (+) and (-) identification in battery compartment.

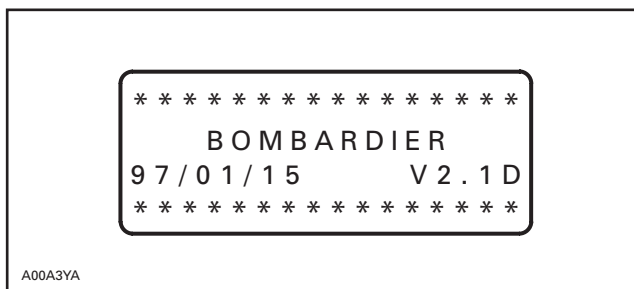


A00A35A

Reinstall battery cover.

## PROGRAMMER START UP

Turn on the programmer, the first screen that appears shows the current date and version (V2.1D) of the programmer. This screen only appears for a short time.



A00A3YA

Next screen asks for a PASSWORD. Do not punch password until authorization number, language selection (optional) and password modification (optional) have been performed.

## AUTHORIZATION NUMBER

Programmer is already updated with the latest software version 2.1. This software version needs to be configured depending on programmer options (Sea-Doo, Ski-Doo or Sea-Doo + Ski-Doo).

To configure programmer options, dealer must contact the nearest Service Representative to obtain an authorization number. **This authorization number is essential to configure and then operate programmer.**

Refer to section OPTION (main menu → others) on page 16 for the complete detailed procedure.

## LANGUAGE SELECTION

When starting the programmer and the wrong language appears, turn the programmer off then press and hold any key and touch **ON/C**. Two beeps will be heard, then the programmer will go directly into the language menu.

**NOTE:** Programmer language may also be modified, as described in section LANGUAGE (main menu → others) on page 16 of this document.

## Procedure

Scroll to desired language by moving pointer with ↓ or ↑ keys.

Press **ENTER**.

Answer **YES** by moving pointer with ↔ keys.

Press **ENTER**, to confirm selection.

Programmer returns to **PASSWORD** screen. To modify password, do not punch password at this point and refer to the following section.

## PASSWORD MODIFICATION

Password is a 4 digit number assigned to the Programmer. This number must be punched each time programmer is being used. Password number can be modified, as described in the following procedure.

## Procedure

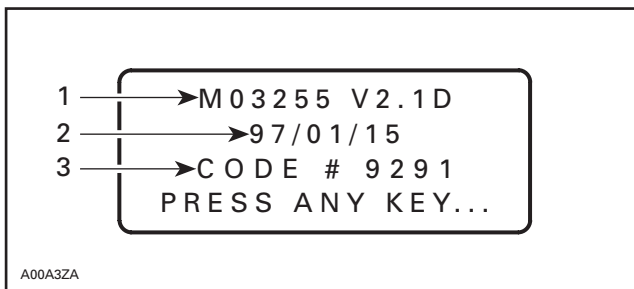
Before entering password, press ?.

Next screens show all available Service Representative phone numbers. Note phone number of the nearest Service Representative.

Service Rep. phone no.: \_\_\_\_\_

**NOTE:** There is a short delay between each screen. Do not press any key. To bypass a screen, press **ENTER**. Refer to phone number table at the end of this document.

The last screen retains information that the Service Representative will need when calling for a new password.



1. Programmer number and software version
2. Current year/month/day
3. Code which is different each time it is viewed, this is the code that Service Representative will ask for to assign a new password

Contact the nearest Service Representative and ask for a new password.

**NOTE:** At this point, do not press any key on the programmer. Keep information screen for reference.

Note new password (given by the Service Representative): \_\_\_\_\_.

Press any key on the programmer to move to the next screen.

Punch new password on the programmer.



Press **ENTER** to open main menu.

Programmer is now ready for programming procedures. Refer to section VEHICLE SET-UP (BEFORE PROGRAMMING) on the next page before any programming procedures.



# PROGRAMMING PROCEDURE

## VEHICLE SET-UP (BEFORE PROGRAMMING)

Before any programming procedures the following must be performed:

- Plug MPEM programmer cable (included with PGMR) to MPEM programmer and vehicle receptacle.
- Start engine.
- Scroll to VEHICLE INFO. from main menu of PGMR.
- Press **ENTER** (engine will automatically stop).

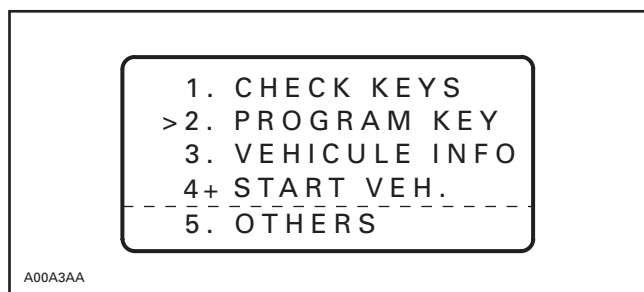
At this point a beep every 3 seconds can be heard indicating that vehicle is in programming mode.

- Press **MENU** to return to the main menu.
- Start programming. Refer to the following sections.

**NOTE:** All vehicle accessories remain ON. To avoid battery discharge remove the lower 20 A accessory fuse from fuse block located in engine compartment. Vehicle remains in programming mode but all accessories are cut, including beep sound.

**NOTE:** After programming procedures when unplugging MPEM cable, all accessories will automatically deactivate.

## PROGRAMMER MAIN MENU



**NOTE:** The plus sign (+) after the 4 indicates that more menu items exist. Move pointer with **↓** or **↑** keys.

## CHECK KEYS (MAIN MENU)

This option allows to check any keys for proper internal electronic components before programming. This option will not verify if key can start engine and should always be used before programming a new key.

### Procedure

Scroll to item no. 1 or select no. 1 CHECK KEYS from main menu.

Plug key to be verified onto programmer receptacle. A 2 beep sound will be heard indicating that key is OK.

Press **ENTER** or any key to return to main menu.

## PROGRAM KEY (MAIN MENU)

This option allows to program or delete keys.

The snowmobile MPEM can be programmed to allow the use of up to 8 tether cords. When 8 tether cords have been programmed **all** cords must be deleted from MPEM memory before others can be added.

## ADD KEYS

(main menu → program key)

Refer to the chart on page 11 for complete procedure.

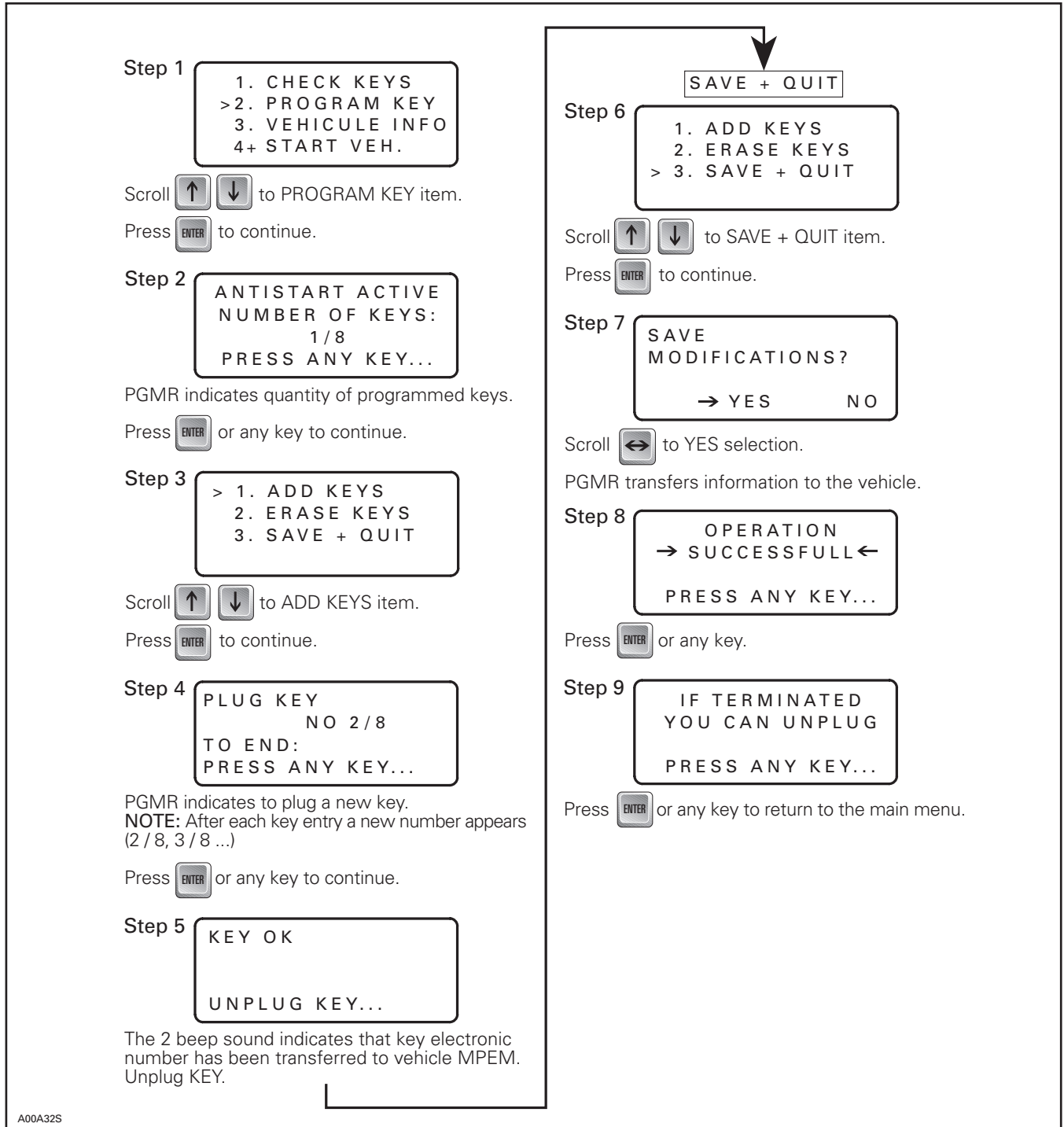
## DELETE KEYS

(main menu → program key)

Refer to the chart on page 12 for complete procedure.

## Add Keys

The following chart lays out the complete procedure to program a new key.



# PROGRAMMING PROCEDURE

## Delete Keys

The following chart lays out the complete procedure to erase keys.

**NOTE:** At least one tether cord must be programmed.

Step 1

1. CHECK KEYS  
>2. PROGRAM KEY  
3. VEHICLE INFO  
4+ START VEH.


Scroll   to PROGRAM KEY item.

Press  to continue.

Step 2

ANTISTART ACTIVE  
NUMBER OF KEYS:  
3 / 8  
PRESS ANY KEY...

**NOTE:** PGMR indicates quantity of programmed keys (3 / 8, 4 / 8...).

Press  or any key to continue.

Step 3

1. ADD KEYS  
>2. ERASE KEYS  
3. SAVE + QUIT


Scroll   to ERASE KEYS item.

Press  to continue.

Step 4

CONFIRM?

→ YES NO

Scroll  to YES selection.


Press  to continue.

**NOTE:** At least 1 key must be programmed.

Step 5

PLUG KEY  
NO 1 / 8  
TO END:  
PRESS ANY KEY...

Plug 1 key.

Press  or any key to continue.

SAVE + QUIT

Step 6

1. ADD KEYS  
2. ERASE KEYS  
> 3. SAVE + QUIT


Scroll   to SAVE + QUIT item.

Press  to continue.

Step 7

SAVE  
MODIFICATIONS?


→ YES NO

Scroll  to YES selection.

Press  to continue.


Step 8

OPERATION  
→ SUCCESSFULL←  
PRESS ANY KEY...

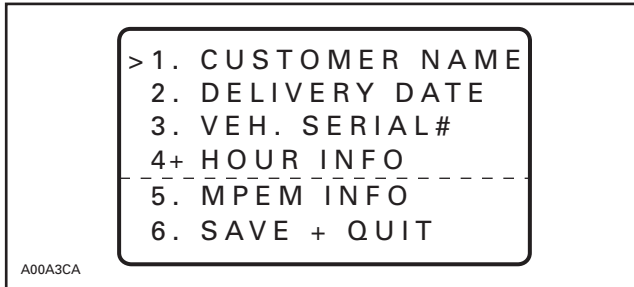
Press  or any key to continue.

Step 9

IF TERMINATED  
YOU CAN UNPLUG  
PRESS ANY KEY...

Press  or any key to return to the main menu.

## VEHICLE INFO (MAIN MENU)



### CUSTOMER NAME (main menu → vehicle info.)

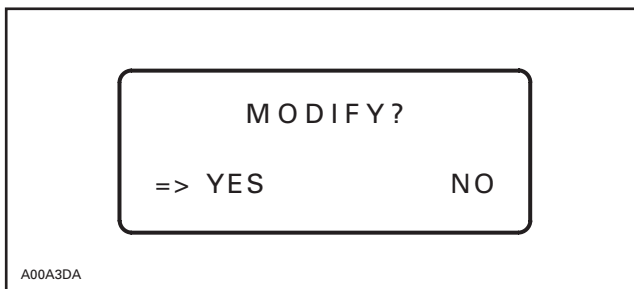
This option allows to enter customer name. This information can be changed at anytime to another customer name.

#### Procedure

Scroll to item no. 1 or select no. 1 CUSTOMER NAME from sub-menu VEHICLE INFO.

Press **ENTER**.

Answer **YES** to modify, by moving pointer with **↔** keys.



Two lines are available with 16 open spaces on each line. Most dealers enter the customer name on line 1 and a personal phone number on line 2.

**NOTE:** Refer to section CONTROL KEYS from GENERAL SPECIFICATION OF PROGRAMMER, page 7, for data entry procedure.

When all information has been entered, press **ENTER** to return to the sub-menu.

Perform the following **SAVE + QUIT** function to save changes.

## SAVE + QUIT FUNCTION

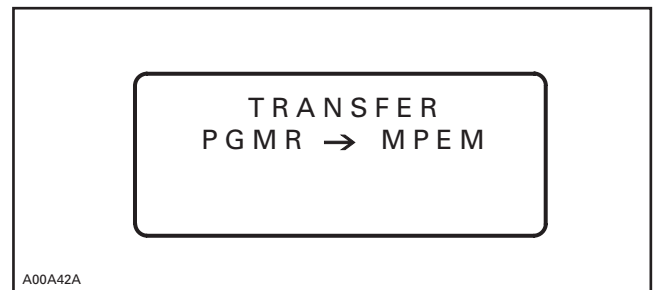
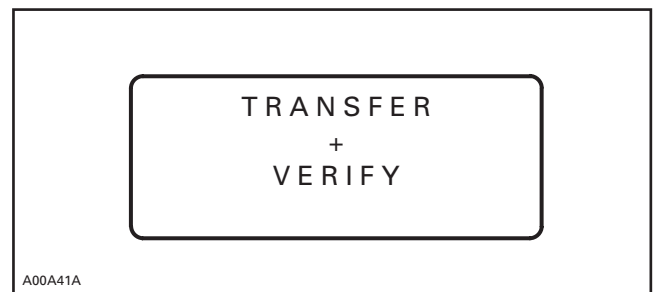
The **SAVE + QUIT** function needs to be performed to ensure that information is transferred from programmer to vehicle electronic module (MPEM).

Scroll to item no. 6 or select no. 6 **SAVE + QUIT** from sub-menu VEHICLE INFO.

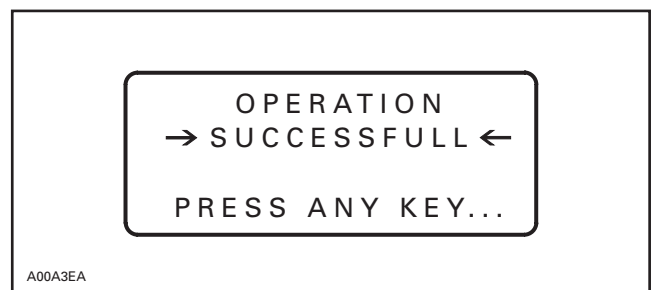
Press **ENTER**.

Answer **YES** to save modifications, by moving pointer with **↔** keys.

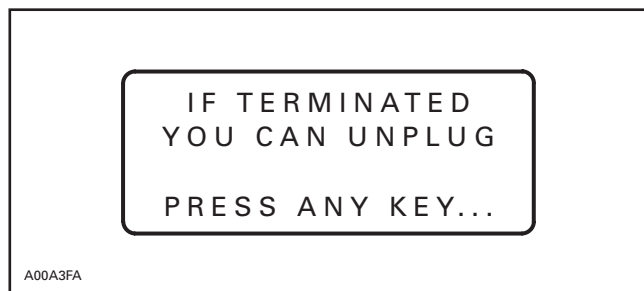
The following messages must be seen:



Whenever saving, a 2 beep code must be heard and the following messages must be seen to acknowledge the information transfer:

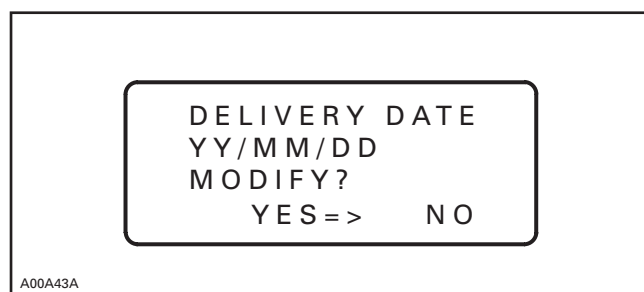


Press **ENTER** or any key.  
The final screen to see is:



Press **ENTER** or any key to return to sub-menu.

## DELIVERY DATE (main menu → vehicle info.)



This option allows to enter delivery date. This information can be changed at anytime to accommodate subsequent sales.

### Procedure

From sub-menu VEHICLE INFO, scroll to item no. 2 or select no. 2 DELIVERY DATE.

Press **ENTER**.

Answer **YES** to modify, by moving pointer with **↔** keys.

Enter the Delivery Date according to YY/MM/DD (YEAR/MONTH/DAY).

To save changes, perform the **SAVE + QUIT** function, as described on page 13 of this document.

## VEHICLE SERIAL NUMBER (main menu → vehicle info.)

This option is a read only menu. Serial Number is programmed at factory and cannot be deleted or modified.

### Procedure

From sub-menu VEHICLE INFO, scroll to item no. 3 or select no. 3 VEH. SERIAL #.

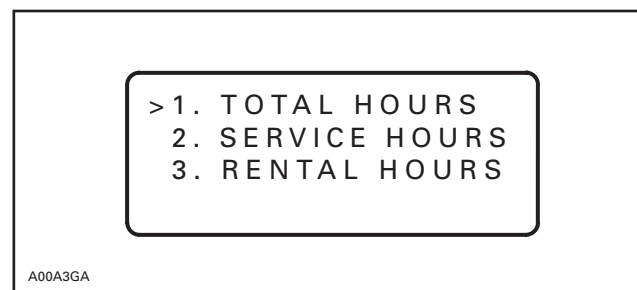
Press **ENTER**.

Screen shows vehicle serial number.

Press **ENTER** or any key to return to the sub-menu.

**NOTE:** Should it be the case, if MPeM needs to be replaced, vehicle serial number can be reprogrammed only once.

## HOUR INFORMATION (main menu → vehicle info.)



This option allows access to the above listed items.

### Procedure

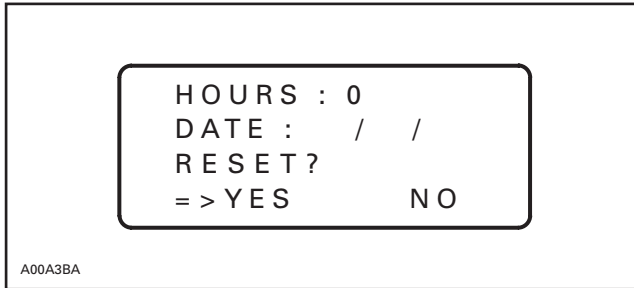
From sub-menu VEHICLE INFO, scroll to item no. 4 or select no. 4 HOUR INFO.

Press **ENTER**.

### TOTAL HOURS (main menu → vehicle info. → hour info.)

This option records and displays hours and **is not** resettable. This is similar to an odometer of a car.

**SERVICE HOURS**  
(main menu → vehicle info. → hour info.)



This option records hours and is resettable to the needs of a servicing dealer.

**Procedure**

From sub-menu HOUR INFO, scroll to item no. 2 or select no. 2 SERVICE HOURS.

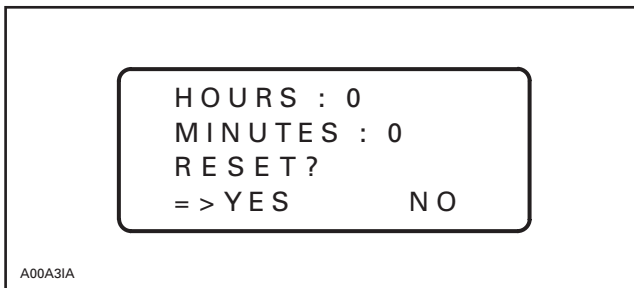
Press **ENTER**.

Answer **YES** to reset, by moving pointer with **↔** keys.

Press **ENTER**.

Programmer automatically resets to current date.

**RENTAL HOURS**  
(main menu → vehicle info. → hour info.)



This option records hours and minutes, this is resettable. This clock offers exact time for rental agencies or for special events.

**Procedure**

From sub-menu HOUR INFO, scroll to item no. 3 or select no. 3 RENTAL HOURS.

Press **ENTER**.

Answer **YES** to reset, by moving pointer with **↔** keys.

Press **ENTER**.

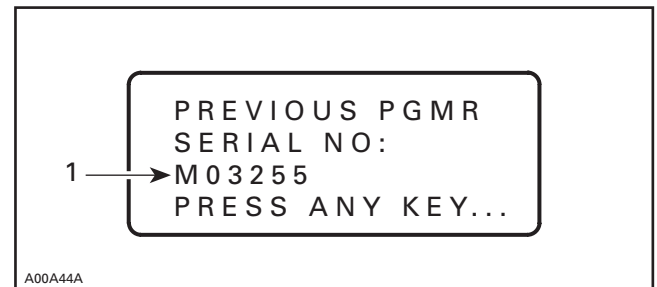
Programmer automatically reset hours and minutes to zero (0).

**MPEM INFO.**  
(main menu → vehicle info.)

This option contains general information about MPEM on the first screen:

- date
- software application (APP):
  - 9 and less refers to SEA-DOO software
  - 10 and more refers to SKI-DOO software
- MPEM serial number
- MPEM software version

On the second screen, this option shows the previous programmer that worked on the vehicle.



1. Previous programmer that worked on the vehicle

**Procedure**

From sub-menu VEHICLE INFO, scroll to item no. 5 or select no. 5 MPEM INFO.

Press **ENTER**.

First screen appears.

Press **ENTER** or any key to move to the next screen.

Press **ENTER** or any key to return to sub-menu VEHICLE INFO.

**SAVE + QUIT**  
(main menu → vehicle info.)

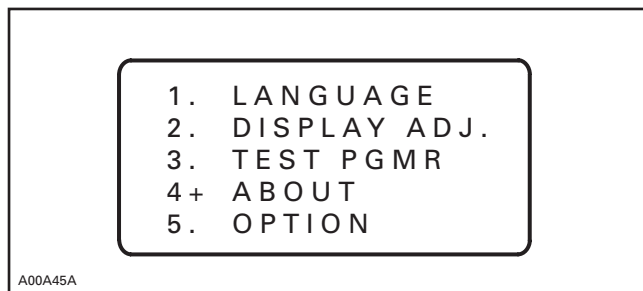
Always use this function to transfer information from programmer to MPEM.

Refer to complete detailed procedure on page 13 of this document.

**START VEH. (MAIN MENU)**

Invalid option at this time.

## OTHERS (MAIN MENU)



### LANGUAGE (main menu → others)

This option allows the programmer operator to choose between 3 different display languages. English, French and Spanish.

**NOTE:** Programmer language may also be modified before entering password. Refer to LANGUAGE SELECTION section on page 8 of this document.

#### Procedure

From sub-menu OTHERS, scroll to item no. 1 or select no. 1 LANGUAGE.

Press **ENTER**.

Scroll to item ENGLISH, FRANCAIS or ESPANOL or select item.

Press **ENTER**.

Answer **YES** to confirm, by moving pointer with **←→** keys.

Press **ENTER**.

### DISPLAY ADJ. (main menu → others)

This option allows to adjust screen contrast.

#### Procedure

From sub-menu OTHERS, scroll to item no. 2 or select no. 2 DISPLAY ADJ.

Press **ENTER**.

Adjust Screen contrast by pressing 1 for darker screen display and 4 for lighter screen display.

Press **ENTER** to return to sub-menu.

### TEST PGMR (main menu → others)

This option allows to test programmer for proper operation.

**NOTE:** Programmer automatically performs the internal test operation.

#### Procedure

From sub-menu OTHERS, scroll to item no. 3 or select no. 3 TEST PGMR.

Press **ENTER**.

Connect both cable ends to the programmer.

Press **ENTER** or any key.

Programmer will indicate that cable is OK. Programmer testing is completed. Programmer is OK.

Press **ENTER** to return to sub-menu.

### ABOUT... (main menu → others)

This option displays programmer information

#### Procedure

From sub-menu OTHERS, scroll to item no. 4 or select no. 4 ABOUT...

Press **ENTER**.

Programmer displays information screen.

- programmer version
- programmer serial number
- current date
- Automatic Power Off Programmer (APOP) delay (can not be modified)

Press **ENTER** or any key to return to sub-menu.

### OPTION (main menu → others)

The following is the complete procedure to obtain authorization number and configure programmer option.

#### Authorization Number

Turn programmer ON.

Punch password.

Press **ENTER**.

From main menu screen, scroll to item no. 5. OTHERS by moving pointer with ↓.

Press **ENTER**.

From next menu screen, scroll to item no. 5. OPTION by moving pointer with ↓.

Press **ENTER**.

CURRENT OPTION screen appears.

Answer **YES** to modify option by moving pointer with ↔.

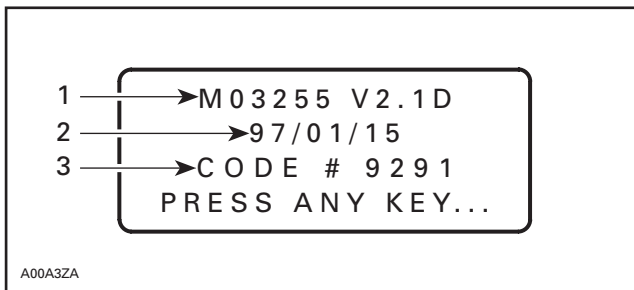
Press **ENTER**.

Next screens show all available Service Representative phone numbers. Note phone number of the nearest Service Representative.

Service Rep. phone no.: \_\_\_\_\_

**NOTE:** There is a short delay between each screen. Do not press any key. To bypass a screen, press **ENTER**. Refer to phone number table at the end of this document.

The last screen retains information that Service Representative will need when calling for an authorization number.



1. Programmer number and software
2. Current year/month/day
3. Code which is different each time it is viewed, this is the code that Service Representative will ask for when calling for an authorization number

Contact the nearest Service Representative and ask for authorization number.

**NOTE:** At this point, do not press any key on the programmer. Keep information screen for reference.

Note authorization number (given by the Service Representative): \_\_\_\_\_.

**NOTE:** This authorization number is valid only once.

Press any key on the programmer to move to the next screen.

Enter authorization number on the programmer.

Press **ENTER**.

Next screen shows selected option, then programmer return to menu screen.

Press **MENU** key to returns to main menu.

Turn programmer OFF then ON to verify software version display screen according to the following table.

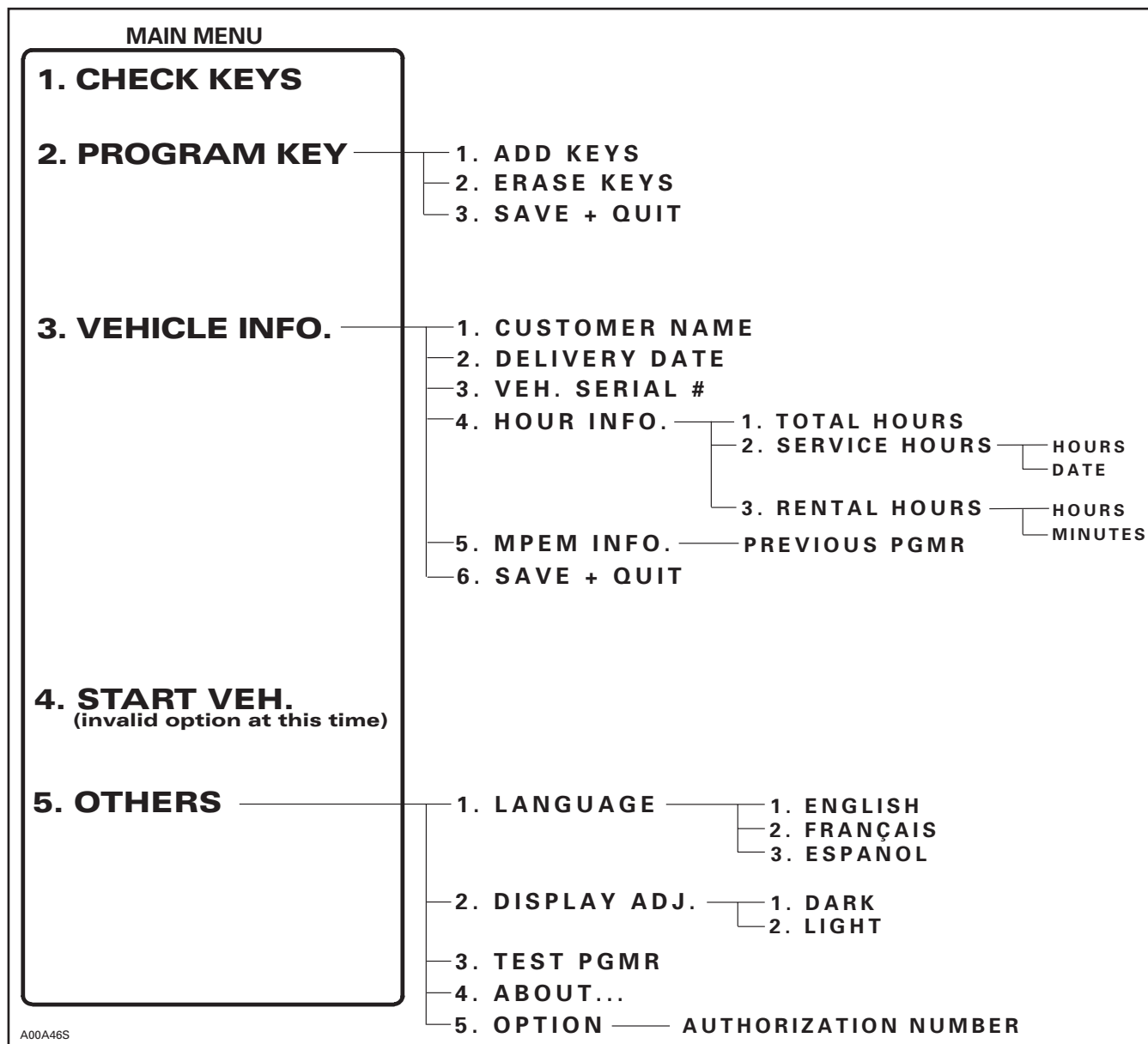
OPTION	SOFTWARE VERSION
SKI-DOO Dealer	V2.1 M
SEA-DOO Dealer	V2.1 D
SKI-DOO + SEA-DOO Dealer	V2.1 P

Programmer is now ready for programming procedures.

Refer to section PROGRAMMING PROCEDURE on page 10 of this document.

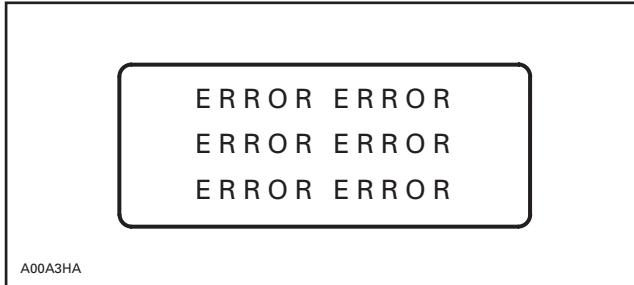


## PROGRAMMING PROCEDURE



## ERROR CODES

A possible ERROR display message might show:



This triple display does NOT require programmer replacement. It indicates:

- A data entry or program routing problem.
- Communication cable incorrect connection.
- **SAVE + QUIT** has not been done.

Re-entering the last data should correct the problem.

DO NOT disconnect or discontinue a DATA transfer before completion. This will prompt an ERROR. The uncompleted program will fall into one of 3 memories. These memory banks are designed to save an unfinished program so it can be re-entered.

# SELF-DIAGNOSTIC

## OPERATING SELF-DIAGNOSTIC

NUMBER OF BEEPS	CAUSE	REMEDY
2 SHORT (when engine is started)	<ul style="list-style-type: none"> <li>Everything is correct with the tether cord (good contact and correct cord).</li> </ul>	<ul style="list-style-type: none"> <li>None... engine can revolve normally.</li> </ul>
1 SHORT EVERY 3 SECONDS (while DESS pilot lamp is blinking)	<ul style="list-style-type: none"> <li>Tether cord is not properly connected.</li> </ul>	<ul style="list-style-type: none"> <li>Clean tether cord cap to remove snow.</li> <li>Push and turn tether cord onto vehicle receptacle.</li> <li>Blow into tether cap.</li> </ul>
CONTINUOUS	<ul style="list-style-type: none"> <li>Wrong tether cord.</li> </ul>	<ul style="list-style-type: none"> <li>Use the tether cord that has been programmed for the snowmobile. If it does not work, check the condition with the programmer. Replace tether cord if reported defective.</li> </ul>

## PROGRAMMING SELF-DIAGNOSTIC

NUMBER OF BEEPS	MEANING	WHAT TO DO
2 SHORT (when programming a new key)	<ul style="list-style-type: none"> <li>Everything is correct with the tether cord.</li> </ul>	<ul style="list-style-type: none"> <li>New tether cord is programmed. Go to next menu or program another key.</li> </ul>
2 SHORT (when checking a key)	<ul style="list-style-type: none"> <li>Key electronic components are OK. Key is ready to be programmed.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to section PROGRAM KEYS from PROGRAMMING PROCEDURE.</li> </ul>
1 SHORT EVERY 3 SECONDS (while programming vehicle with programmer)	<ul style="list-style-type: none"> <li>Vehicle is in programming mode.</li> </ul>	<ul style="list-style-type: none"> <li>If not, refer to VEHICLE SET-UP procedure from section PROGRAMMING PROCEDURE.</li> </ul>

# SERVICE REPRESENTATIVE PHONE NUMBERS

The following table lists all available Service Representative phone numbers when calling for an authorization number or a new password.

COUNTRY	SERVICE REPRESENTATIVE PHONE NUMBERS
UNITED STATES	1-800-366-6992
CANADA	1-800-361-9980
SOUTH AMERICA	407-722-4000
SINGAPORE	65-22-767-55
PARIS	33-1-41-79-02-40
RUSSIA	7-095-291-53-81