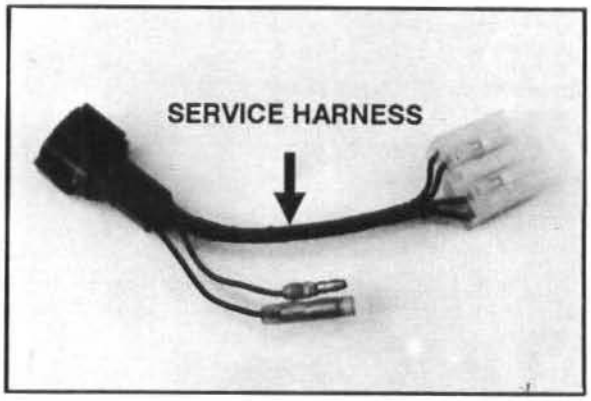
Select Monitor

The select monitor (PN 2870969) is designed to provide easy, accurate diagnostic and service information to the technician. When installed on the machine it will provide both dynamic and static displays of the function of critical fuel system control components. It also has the ability to display the contents of the ECU memory. With this tool, electrical service of the EFI system should be quick and easy.

Remove protective plug from diagnostic plug in machine harness next to ECU. Connect select monitor to instrument harness, to service harness, and to diagnostic plug in. Install program cartridge into select monitor. Turn on ignition switch and place handlebar kill switch into run position. Turn on select monitor switch. On most models the monitor display will now light up.

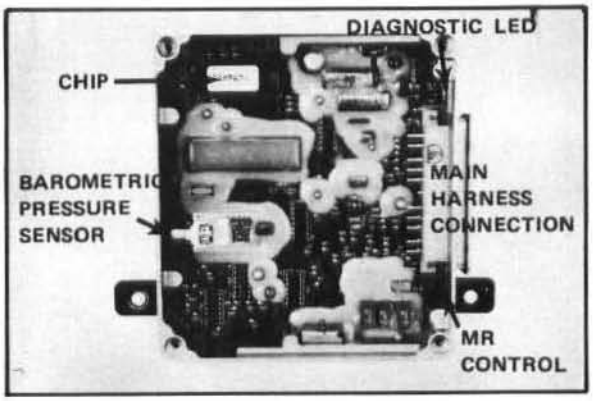
NOTE: On 1993 500 models, it is necessary to connect the Red/Yellow and Yellow/Green wire in the 5 pin electric start coupler with a jumper wire to maintain power to the ECU and select monitor. Type I models will stay powered up with switches on. On Type II systems, the time will be limited unless the engine is running. On 1994 and later models, the ECU will remain powered for approximately one minute at room temperature and above.



There are two ways to search for information with the monitor. You can scroll through the different modes in order until the correct information is found, or you can select the specific mode letter and number and advance to the specific information that you want.

Electronic Control Unit

The Electronic Control Unit (ECU) is the brain of the EFI system. It is a digital computer which holds the memory chip for the read out of basic injector opening duration on a three dimensional map. There are two ECU systems used, Type 1 for the RXL and Type 2 for the 500 EFI snowmobiles. Each system receives the same type of information from the sensors. The ECU incorporates a number of special features. Some of these features are: adjustable low speed mixture control, automatic cold engine start up enrichment, engine over temperature protection, flooded engine cleanout mode, failsafe feature and LED self diagnostic system. In the event that any sensor should give inaccurate or no information, the ECU will then flash a coded light sequence to identify the affected sensor. **NOTE:** It is important to note that the ECU will not identify mechanical problems. Only sensor inputs are monitored. For example, low fuel pressure or lack of fuel will not be diagnosed.



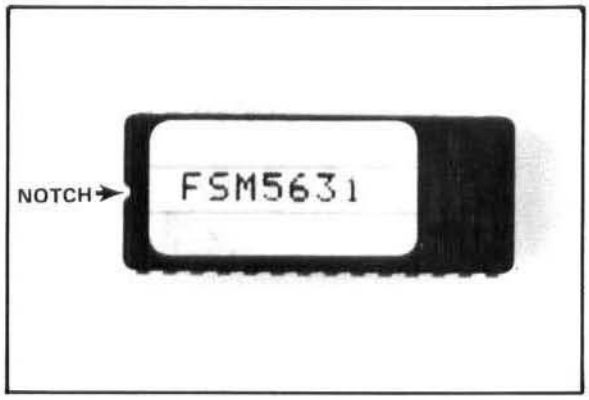
The ECU can only tell if a sensor reading is within a specific range. For example, a failure code will not be indicated if throttle position shows 3.9° when the throttle is actually wide open. Use display of throttle position to ensure the readings reflect actual conditions. This same concept applies to the temperature sensors and the barometric sensor.

ECU Part Numbers

Type I w/o chip	2410028
Type I w/o chip Elect. Start	2410029
Type II w/o chip	2410030

ROM Chip Removal and Installation

The chip can be removed and replaced with the appropriate chip puller and installation tool. You will need to supply ROM Removal Tool (Digi-Key PN K158-ND; Call 1-800-344-4539); and Nyogel (Polaris PN 2871044). Note the location of the indicator notch when replacing the chip (see photo). The system will not function with the chip in backwards or with the chip pins not properly in their sockets. See the specification section in this chapter for chip information.



CAUTION: The computer chip and the ECU are extremely sensitive to static electricity. The handling of either component in a static electricity environment will cause irreversible damage. Work on a metal bench or other static dissipating surface. It is very important that you ground yourself by touching the crystal inside the ECU before any internal service work begins on the ECU assembly. See the Illustrations 1 and 2. If the ECU has not been removed from the machine, be sure to unplug it before proceeding.

1. Disconnect main harness connector from ECU. Remove phillips head cover screws and cover.

2. Touch the crystal located inside the ECU box to ground yourself before proceeding. See Illustrations 1 and 2. **CAUTION:** The chip and the ECU are very sensitive to static electricity. Working inside the ECU without grounding yourself may cause irreversible damage to either or both components.

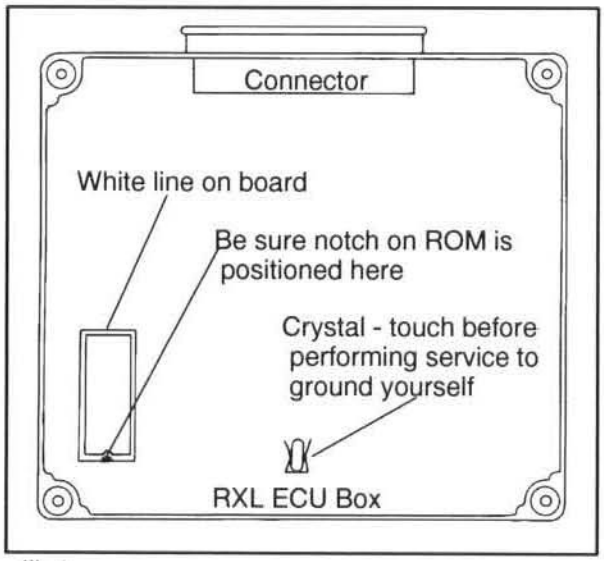
3. In the event you are removing an old chip for replacement, place ROM removal tool (Digi-Key PN K158-ND) over ROM chip. Pull up on triggers to securely grasp chip and pull chip out.

4. Check charts on page 4.35 to be sure you are installing the correct ROM.

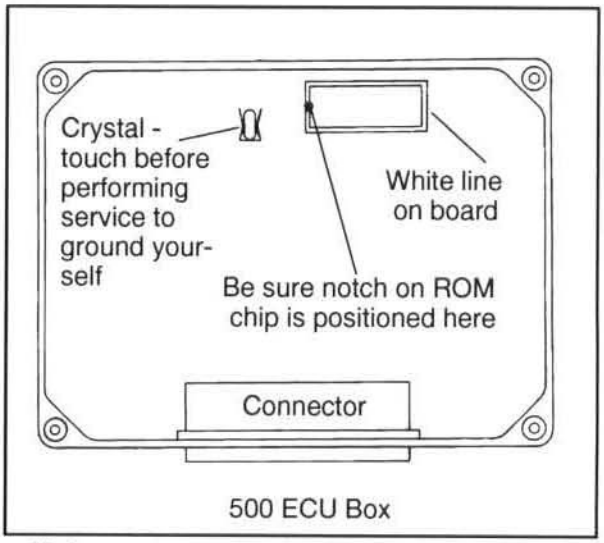
5. Coat the pins of the ROM with a light coating of Nyogel (Polaris PN 2871044).

6. Carefully insert the ROM, making sure the notch on the end of the ROM matches the notch indication mark drawn in white on the circuit board. See illustrations 1 and 2. **CAUTION:** If the chip is installed with the notch incorrectly positioned the chip will be ruined and the machine will fail to run.

7. Align cover gasket, positioning cover rubber bumper above chip. Reinstall cover screws and reconnect wire harness. Install select monitor and check functions.



Ill. 1



Ill. 2