



1997 - 98 Micro Touch Rev-Limiter Installation Instructions for all Sea•Doo® Watercraft with 785cc or 951cc SINGLE COIL Ignitions 97-XP / 97-GTX / 97-GSX / 97-GSX-L / 98-XP-L / 98-SPX / 98-GSX-L 98-GTX-L

These instructions are intended to aid in the installation of the MT-REV-SD-97 Rev-Limiter Module. **Please read the following instructions completely before beginning installation.** If there is any portion that you do not understand, contact a qualified Sea•Doo Mechanic or Micro Touch technical assistance at (714) 556-6100 or you can find our most frequently asked questions on the World Wide Web @ www.RevLimiters.com Basic mechanical and electrical knowledge is required. A Sea•Doo shop manual may also be of great assistance.

Note: The installation of this product may void the factory Sea•Doo Warranty.

Tools Required:

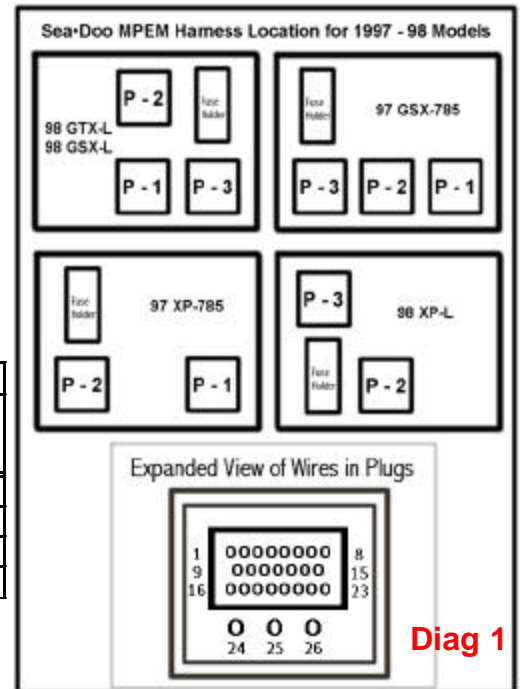
- Wire Crimping Pliers
- Wire Strippers / Wire Cutters
- Heat Gun
- Volt Meter or 12 Volt Test Light
- Knife or Razor Blade
- Black Electrical Tape
- Timing Light
- Dial Indicator Gauge
- Spark Plug Wrench
- Standard Tools
- **More than basic Knowledge Required!**

INSTALLATION PROCEDURE (Refer to Addendum A for all wire connections)

Plug # - Wire Pin Location # Chart

Wire Color	USE	98			97			
		XP-L	GSX-L 951cc	GTX-L	GSX 785cc	GTX 785cc	XP 785cc	GSX-L 951cc
Yellow/White	Mag	P2-1	P2-1	P2-1	P3-21	P3-21	P2-21	P2-1
White	Coil	P3-18	P3-18	P3-18	P3-18	P3-18	P2-18	P3-18
Purple	12v	P2-2	P1-24	P1-24	P1-24	P1-24	P1-14	P1-24
Black	Gnd	P3-17	P3-17	P3-17	P3-17	P3-17	P2-17	P3-17

Table 1



Diag 1

- 1) **Getting Started.** Locate the battery in your watercraft and disconnect the ground (-) Cable. Then open the storage hood and remove the white storage bin to locate the M.P.E.M. On the 97 XP it is in the nose just in front of the engine. On the 98 XP-L it is located above the engine's exhaust headpipe. On the GTX and GSX Models it is located on the side of the hull, in the left front, ahead of the fuel tank. Now find a suitable location to mount the MT Rev-Limiter. Once you think you have found a location make sure the wires will all reach. Before moving to the next step, locate your year and model watercraft in Diag. 1 and Table 1. Each M.P.E.M. module will have 2 or 3 plugs, depending on your model. Familiarize yourself with you M.P.E.M. modules. Each wire harness has the number 1, 2, or 3 on the plastic plug, as well as next to the plug on the M.P.E.M. See Expanded View of Wires in Plug (Diag. 1) for corresponding wire numbers used in Table 1, for example: P2-1 means Plug 2 - Wire #1.
- 2) **Connecting 12-Volts.** Now that you are familiar with the M.P.E.M. module and wiring, refer to Table 1 to locate the purple (12-volt) switched wire for your watercraft's M.P.E.M. There may be more than one purple wire. It is very IMPORTANT that you choose the 12-volt switched purple wire. This wire will have 11.5 - 12.8 volts when just the start switch is depressed and the gauges are working. First follow the test below, then make sure once you cut this wire that you connect both ends to the MT Rev-Limiter.

NOTE: Install the Battery Cable for this test!

Test # 1 Do NOT install the tether cord. Depress the start/stop switch and the gauges come alive for approximately 20 - 30 seconds. During this time, check the purple wire for proper voltage. Your meter should show 11.5 -12.8 volts.

Test # 2 Install the tether cord and start the watercraft just for a quick check to see that when you pull the throttle and the engine increases in rpm, the voltage will increase to almost 14 volts. (If it decreases in voltage you have the wrong wire)

Test # 3 Now with the engine running, pull the tether or depress the start/stop switch and watch the voltage go to "0 Volts".

NOTE: If all 3 tests check out, you have chosen the correct wire. Refer to Addendum A for wire connections and wire routing.

Now once again Disconnect the Battery Ground (-) Wire.

CAUTION: Before heatsealing the crimp on connectors, make sure the hull is properly ventilated of fuel fumes. If it smells like fuel, wash out the hull with detergent soap and water. Place a large fan in the rear of the watercraft drawing fumes out of the hull.

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- 3) **Connecting the Black Ground Wire.** A solid ground is needed for the MT Rev-Limiter. Using Table 1, locate the Black Wire. Refer to Addendum A for wire connections and wire routing. The ground wire is the most important connection. Once you cut this wire, make sure that you connect both ends to the MT Rev-Limiter. Check ALL the ground connections on the engine and in the coil box. All of these connections need to be clean and tight. It is also crucial that ALL the connections to the engine cases are paint free and are covered in a good Dielectric Grease AT ALL TIMES!
NOTE: Always make sure your battery is serviced and in tip-top shape. Make sure the battery is filled with water to the top fill line and all the connections are clean and also covered in Dielectric Grease!
- 4) **Connecting the Coil Wire.** Using Table 1, locate the solid White wire that goes from the M.P.E.M. to the ignition coil. Once you locate the White wire at the M.P.E.M., cut this wire several inches away from the M.P.E.M. You will need to connect the white wire you have just cut from the M.P.E.M. to the White wire labeled "M.P.E.M." on the MT Rev-Limiter. Now connect other end of the cut White wire to the White wire Labeled "COIL" that comes from the corner of the MT Rev-Limiter.
- 5) **Connecting Magneto Wire.** Using Table 1, locate the Yellow/White wire in the harness that goes from the magneto gray plug to the M.P.E.M. (see Addendum A for cutting and crimping to the corresponding wire on the MT/Rev-Limiter). Cut this wire and connect both ends to the MT Rev-Limiter.
- 6) **Adjusting Jumper Settings.** *** The jumper settings ALL are very Important ***
 - a) **Adjusting the Rev-Limiter.** The Rev-Limiter should be set to the lowest possible RPM with the Rev-Limiter NOT engaging in smooth to slightly choppy water, but should limit the RPM in rough water when the pump leaves the water. These are adjusted with jumpers (see Chart # 1 for adjustments).
 - b) **The Retard Jumper Settings.** The Retard is a feature used to control the engine temperatures while running at full throttle and extended running. This is an adjustment that is noticed with a deto sensor.
- 7) **Factory Pipe Rev-Limiter / E.C.W.I. ONLY!**

Connecting the Long White wire to the solenoid. Route the wire carefully to the solenoid. Tie it along the factory harness as far as you can. Make sure the wires DO NOT come close to the pipe or the carburetors. Now connect the Red/Black wires to the solenoid. The polarity does NOT matter!

The preset E.C.W.I.™ Settings are as follows:

Water	ON	=	3,650 rpm's
Water 5/8	ON	=	6,150 rpm's
Water 4/8	ON	=	6,300 rpm's
Water 3/8	ON	=	6,400 rpm's
Water 2/8	ON	=	6,550 rpm's
Water	OFF	=	6,780 rpm's

Testing these points can be done two different ways: 1) either watching the water come out of the hose connected to the solenoid or 2) by hooking up a 12 test light to the Red and the Black wires coming out of the MT REV SD 97 Module. Back the watercraft into the water and run the engine to 3,650 rpm's and the light should light and stay steady bright until 6,150 rpm's and then flicker off at 6,780 rpm's. The light should stay off at all other rpm's below and above the range listed above.

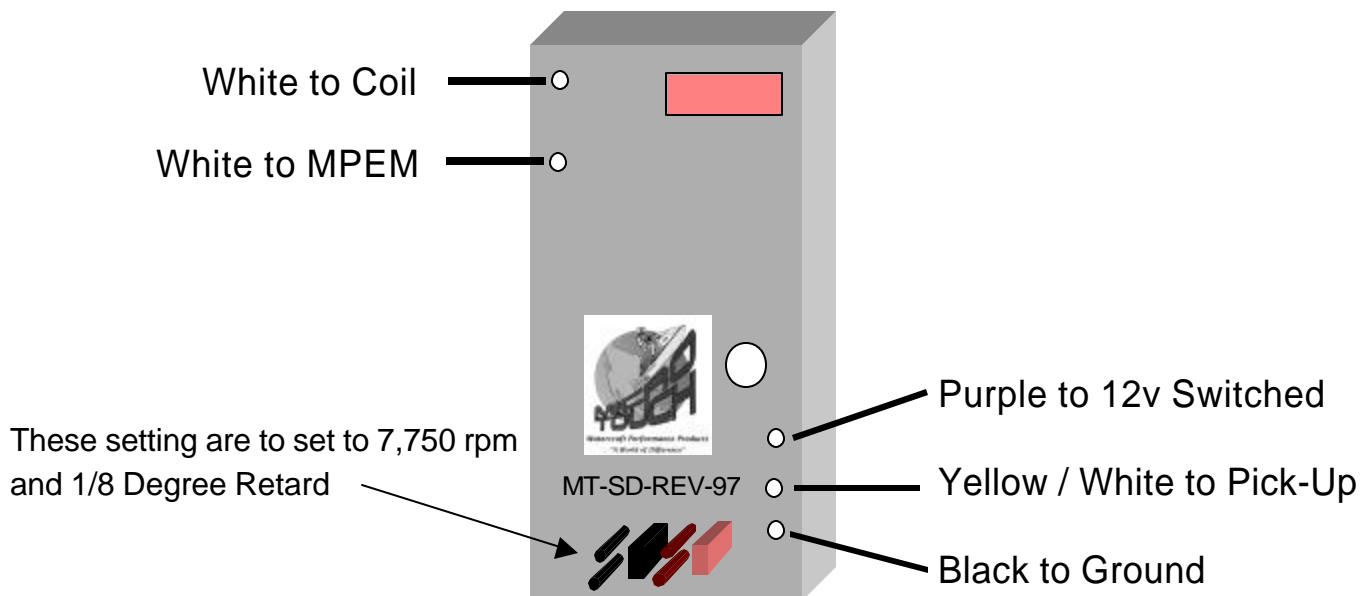


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Chart # 1

Adjustable
Rev-Limiter for 97-98 Sea•Doo® Watercraft
Equipped with 785cc or 951cc Engines

Rev-Limits	J1	J2
7,500 RPM	█	█
7,750 RPM	●	█
8,000 RPM	█	●
8,250 RPM	●	●
Timing Retard @ 7,000 RPM		
	J3	J4
1/16 Degree	█	█
1/8 Degree	●	█
1/4 Degree	█	●
1/2 Degree	●	●
*** Starts Retard @ 7,000 RPM and Retards Every 250 RPM ***		
LEGEND █ = Jumper ON or ● = Jumper OFF		



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Addendum A

Wire Connections

- 1) Find a suitable location to cut the wire. We suggest 8 - 12 inches from the M.P.E.M This will allow plenty of room to make your connections. Vary cut locations to avoid a cluster of connectors.
- 2) Cut wire and strip a 1/4" off each end of cut wire. See Diagram.
- 3) Locate corresponding color wire on the MT Rev-Limiter Module.
- 4) Crimp the supplied heat-sealed butt connectors. Be sure the wire is fully engaged in the metal part of the connector before crimping.
- 5) Make sure these connections are all crimped good (give a strong tug on the wires). See Diagram.
- 6) Heat-seal connectors. See Diagram.

NOTE: Exercise **Caution** when using a heat gun or any device to heat-seal these connectors. The plastic shroud over the factory Sea•Doo harnesses **MELTS** at a very low temperature. Pull the wire away from the shroud and seal with caution!

CAUTION: Before heatsealing the crimp on connectors, make sure the hull is properly ventilated of fuel fumes. If it smells like fuel, wash out the hull with detergent soap and water. Place a large fan in the rear of the watercraft drawing fumes out of the hull.

Supplied BUTT Connector



Trim wire 1/4 - 3/8 of an inch



Once you insert the wire all the way crimp and test by giving a good pull.



Here is a proper Crimp and Heat Seal.



Micro Touch, Inc.

www.RevLimiters.com

Any Questions E-Mail to: info@microtouchinc.com

or

Call: Tech Line (714) 556-6100