

# Table of Contents

<b>EVO: Specific Troubleshooting</b> .....	1
<b>General Practices &amp; Procedures</b> .....	1
<b>ECM Password Learn Procedure</b> .....	1
<i>Setting TSM/HFSM and ECM Password</i> .....	1



[Go To Technical Menu](#)

# EVO: Specific Troubleshooting

## General Practices & Procedures

### ECM Password Learn Procedure

The TSM/TSSM modules share a password with the ECM on fuel injected bikes (and ICM's on early rubber mount bikes). When replacing an ECM/ICM or TSSM, you must go through a password learn procedure. If the procedure is not followed, the engine will start and run for a few seconds, and then stall. This will typically throw a P1009 diagnostic code.

The learn procedure **MUST** be followed from start to finish without any interruption. If interrupted, starting over from the beginning is the only option.

**Connect the motorcycle up to a trickle charger and pull the headlight fuse before starting these steps, which take more than 30 minutes to complete.**

For information about removing/replacing the TSM/TSSM, click this [XLForum Thread](#) by Cosmo on the topic.

Device Replaced	Password Learn Procedure Required?	<sup>1)</sup>
ECM	Yes	
TSM	No*	
TSSM	Yes	

\*If a TSM has been replaced with a HFSM, or a HFSM has been replaced by a TSM, password **is** necessary.

### Setting TSM/HFSM and ECM Password

Step #	Action	Confirmation	Notes	<sup>2)</sup>
	Ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off.	Remember to pull the headlight fuse.	

Step #	Action	Confirmation	Notes	2)
1	Install new TSM/HFSM or ECM.			
2	Set <b>RUN/STOP</b> switch to <b>RUN</b> .			
3	Turn <b>IGN</b> key <b>ON</b> .	Verify Check Engine Lamp and Security Lamp illuminate and then turn off.	TSM/HFSM enables starter relay.	
4	Attempt normal start <b>one</b> time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009.	
5	Wait ten seconds. Security lamp will illuminate and stay on.	Security Lamp illuminates.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.	
6	Wait until Security Lamp turns off.		This takes ten minutes. (If no speedo or security light is available, wait <b>at least 10 minutes</b> .)	
7	Quickly (within two seconds) turn <b>IGN</b> key <b>OFF-ON</b> .		ECM must not be allowed to shutdown.	
8	Wait until Security Lamp turns off.		This takes ten minutes. (If no speedo or security light is available, wait <b>at least 10 minutes</b> .)	
9	Quickly (within two seconds) turn <b>IGN</b> key <b>OFF-ON</b> .		ECM must not be allowed to shutdown.	
10	Wait until Security Lamp turns off.		This takes ten minutes. (If no speedo or security light is available, wait <b>at least 10 minutes</b> .)	
11	Quickly (within two seconds) turn <b>IGN</b> key <b>OFF-ON</b> .		ECM must not be allowed to shutdown.	
12	Turn <b>IGN</b> key <b>OFF</b> . <u>Wait 15 seconds before turning IGN on.</u> Turn <b>IGN</b> switch <b>ON</b> and start engine to confirm successful Password Learn procedure. Clear diagnostic trouble codes.			
13	If the learn procedure is interrupted or fails in any way, you must restart your attempt from the beginning of the procedure			

(This section contributed by Screw Loose Dan )

### Go To Technical Menu

1)

See 2007 Harley-Davidson Sportster Electrical Diagnostic Manual Section 3.25, pg 3-72

2)

See 2007 Harley-Davidson Sportster Electrical Diagnostic Manual Section 3.25, pg 3-73

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