

## MEMCAL Extraction and Replacement

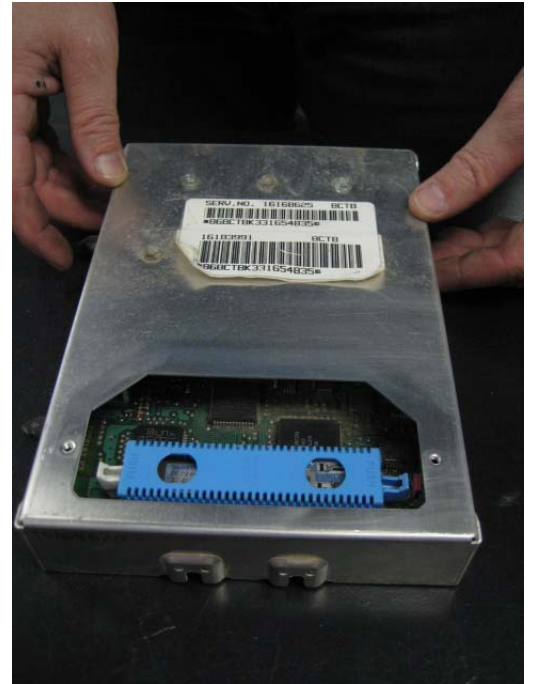
The ignition should always be off when installing or removing the ECM connectors

### Remove or Disconnect

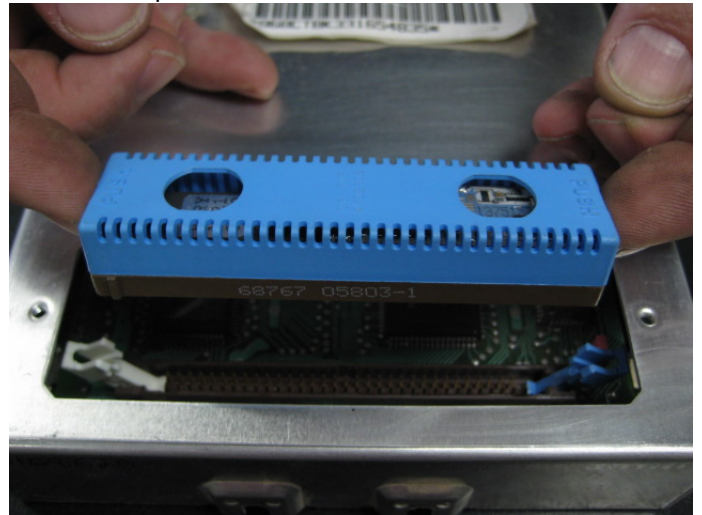
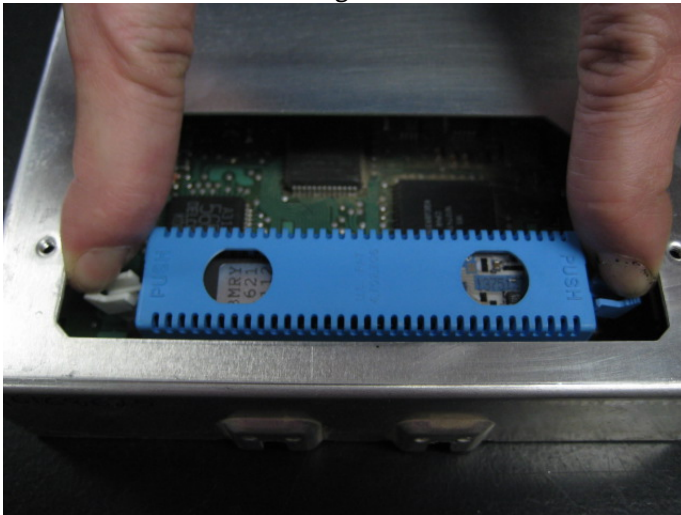
1. Connectors from ECM
2. ECM mounting hardware

**Important:** Electronic Control Module (ECM) mounting hardware not illustrated, hardware configuration will vary with car division.

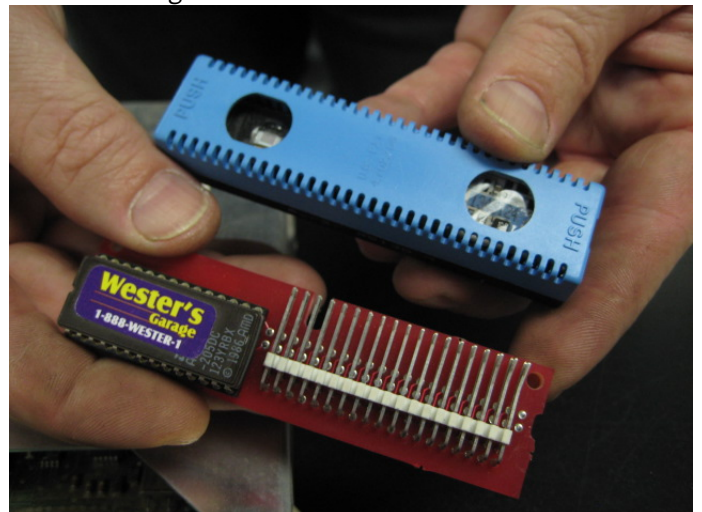
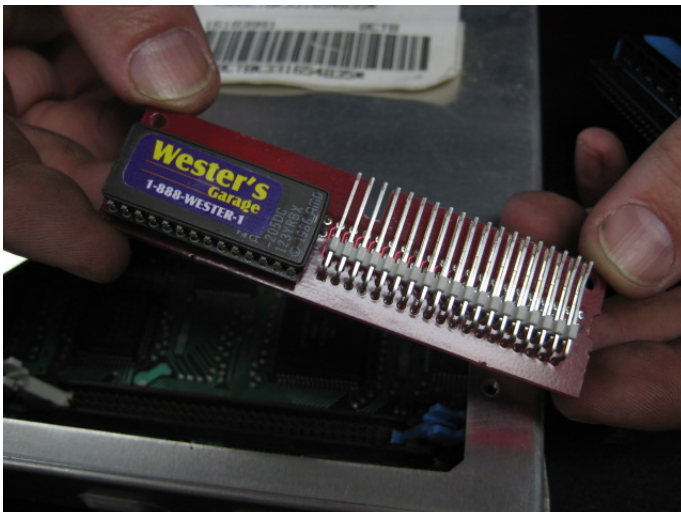
3. ECM from passenger compartment
4. ECM access cover
5. MEMCAL from assembly



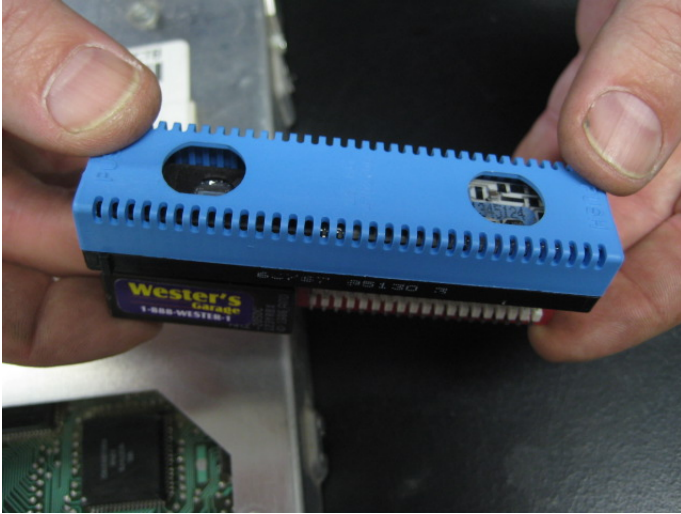
Place fingers on each side of the MEMCAL, press on each clip to release the MEMCAL



Attach the Wester's "memboard" to the existing MEMCAL



The MEMCAL should look like (e). Rotate the MEMCAL as shown in (f)



Press the rotated MEMCAL with attached memboard into the computer.



### Install or Connect

1. Access cover on ECM
2. ECM in passenger compartment
3. Connectors to ECM

### Functional Check

1. Turn ignition on
  2. Enter diagnostics
    - A. Code 12 should flash four times. (No other codes present.) This indicates the MEMCAL is installed properly.
    - B. If trouble code 51 occurs or if the check engine light is on constantly with no codes, the MEMCAL is not fully seated, installed backwards, has bent pins, or is defective.
- If not fully seated, press firmly on MEMCAL.
  - If it is necessary to remove the MEMCAL, follow instructions in appropriate steps.
  - If installed backwards, REPLACE THE MEMCAL.
  - If pins bend, remove MEMCAL, straighten pins, and reinstall. If bent pins break or crack during replacement, REPLACE THE MEMCAL.
  - If we sent you a complete MEMCAL, install same as the one you removed

## 1987-1995 GM TBI “Set Timing” Instructions

^ Engage the parking brake and block the wheels.

^ Place the transmission in neutral.

1. Refer to the Vehicle Emissions Control Information label under the hood. Always follow the vehicle Emissions Control Information label procedures first before using the following procedure.
2. Put the IC system in the bypass mode by disconnecting the “set timing” connector. This is a single wire sealed connector that has a tan with black stripe lead. This connector breaks out of the wiring harness below the heater case in the passenger compartment.
3. With the ignition switch “OFF”, connect the pickup lead of the timing light to the number one spark plug. Use a jumper lead between the wire and plug or an inductive type pickup.

DO NOT pierce the wire or attempt to insert a wire between the boot and the wire. Connect the timing light power leads according to manufacturer’s instructions.

4. Start the engine, and aim the timing light at the timing mark. The line on the balancer or pulley will line up at the timing mark. The timing should be  $0^{\circ}$  TDC. If a change is necessary, loosen the distributor hold-down clamp bolt at the base of the distributor. While observing the mark with the timing light, slightly rotate the distributor until the line indicates the correct timing. Tighten the hold-down bolt, and recheck the timing.
5. Turn “OFF” the engine and remove the timing light. Reconnect the number one spark plug wire, if removed.
6. Reconnect the “Set Timing” connector.

