

ECU and TPI Setting Change - 175 Magnum/XRi

1991 175 fuel injection models have a new electronic control unit (ECU) and a change to the throttle position indicator (TPI) setting. The ECU test is attached to this bulletin and will be added to the EFI tester manual and V6 service manual. The TPI is now set at .250 volt instead of previous setting of .135 volt. It is important that the TPI be set properly for smooth operation. Also, an idle stabilizer/high speed advance module (used on Magnum II and XR4) is installed in place of the idle stabilizer and results in an ignition timing change.

MODELS:

1991 Mariner 175 Magnum	s/n 0D007414 and above
1991 Mercury 175 XRi	s/n 0D007414 and above

CHANGES:

Electronic Control Unit (ECU)

New
p/n 14632A15

14632A15 ECU test is printed on a separate page. Insert in electronic fuel injection tester manual 90-13833--2.

Throttle Position Indicator (TPI)

Use TPI test lead p/n 91 -816085 and digital volt meter from ECU tester p/n 91 -11001 A1.

New Setting
0.250 volt + / - .010 volt

Spark Control Module

Magnum II/XR4
Idle Stabilizer/High Speed Advance
p/n 93772A-5

Timing

Idle timing at cranking

- 300 RPM with all spark plugs removed except number one.
- disconnect idle stabilizer/advance module (white/black wire)

4 degrees ATDC

Maximum timing at cranking

- 300 RPM with all spark plugs removed except number one.
- disconnect idle stabilizer/advance module (white/black wire)

21 degrees BTDC

Maximum timing at 3000 RPM in gear

- connect idle stabilizer/advance module (white/black wire)

20 degrees BTDC

Maximum timing at 5100-5600 RPM

- connect idle stabilizer/advance module (white/black wire)

25 degrees BTDC

Maximum RPM

5000-5600 RPM at wide open throttle (WOT)

MODEL 175 ECU No. 14632A15

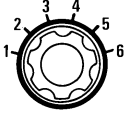
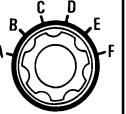



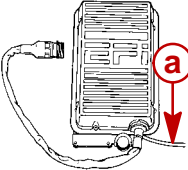
EFI COMPONENT TESTS

- ECU Test
- Throttle Sensor
- Air Temperature Sensor
- Cold Start Enrichment
- Ignition Kill
- Pressure Transducer

**1991 Mariner 175 Magnum (2.4 Litre);
1991 Mercury 175 XRi (2.4 Litre)
Insert into EFI Tester Manual 90-13833--2**

Refer to Page 2 for Tester Set-up

IMPORTANT: DISCONNECT WATER TEMPERATURE SENSOR (TAN/BLK) LEADS FOR THROTTLE SENSOR TEST.

	SWITCH POSITION	SWITCH POSITION	NORMALIZING the EFI system		
	 ECU PARAMETERS	 SYSTEM PARAMETERS	 A ECU NORMALIZE	<ol style="list-style-type: none"> 1. Set ECU Parameters switch to position 1. 2. Set System Parameters switch to position A. 3. Rotate ECU Normalize knob to obtain reading of 1.40 on meter. ECU is now normalized. DO NOT move ECU Normalize knob once reading is obtained. 4. If 1.40 is not attained, ECU is faulty. 	
	Test Steps	ECU Parameters Switch Positions	System Parameters Switch Position	Specified Reading	CORRECTIVE ACTION if readings do not match
ECU TEST	1	2	A	.96 ± .04	Faulty ECU
	2	3	A	.81 ± .04	Faulty ECU
	3	4	A	.72 ± .04	Faulty ECU
	4	5	A	.52 ± .04	Faulty ECU
	5	6	A	.26 ± .04	Faulty ECU
THROTTLE SENSOR TEST	1	5	B	From closed to wide open throttle, meter reading should move two or more numbers.	Throttle sensor faulty, out of adjustment or harness faulty if meter does not change smoothly with throttle motion.
AIR TEMPERATURE SENSOR TEST	1	3	C	Low .78 High .85	If meter reading is above .85, there is a faulty air temperature sensor or open sensor lead. If meter reading is below .78, there is a faulty air temperature sensor or shorted sensor lead.
COLD START ENRICHMENT TEST	1	6	A	Press cold start enrichment button. Meter reading should increase a minimum of 10. Example: .26 → .36 or higher.	 COLD START ENRICHMENT
IGNITION KILL TEST	1	1	A	Press Ignition Kill button. Meter reading should decrease 2 to 3 times, then fall to 0.01. Example: 1.40 0.40 0.01	 IGNITION KILL
PRESSURE TRANSDUCER TEST	1	1	A	Disconnect ECU transducer tube (a) from fitting on outboard. Draw air from tube. Meter reading should decrease as air is drawn from tube. If no number change, the ECU is faulty.	

*Note: Refer to Timing/Synchronizing/Adjusting Section of Service Manual for throttle position sensor adjustment.

REFER TO PAGE 3 TO COMPLETE TEST