mercruiser STERN DRIVES & INBOARDS

# service bulletin

TO: SERVICE MANAGER ☐ TECHNICIANS ☐
PARTS MANAGER ☐

**No. 94-2**

▲ = **Revised April, 1994**

## A. THUNDERBOLT V IGNITION SYSTEM

### Models

▲ All MCM/MIE Models with Thunderbolt V Ignition System.

### Description

This new ignition system uses the same distributor that is used on the Thunderbolt IV. The change is the Ignition Module mounted on the distributor.
This new Ignition Module controls Idle Speed Spark, Acceleration Spark, Mean-Best-Timing (MBT) Spark Advance and has a built in Rev-Limiter.
A Knock Retard Spark Control Module is also mounted on the distributor to help protect the engine from detonation.

▲ A more detailed explanation of this system and troubleshooting procedures are outlined in the Service Manual Supplement “Thunderbolt V Ignition System” (90-823224941) that was mailed out to all dealers.

### Rev-Limiter

▲ The Rev-Limiter is set 50 RPM above the maximum engine RPM. When the engine reaches this limit, it starts to miss because the spark is turned off. When the engine drops 300 RPM, spark is turned back on. Because of this, prop selection tests should start with higher pitches then work your way down to the correct pitch for the boat.

**IMPORTANT: Do Not prop engine at Rev-Limiter RPM.**

### Audio Warning System

▲ The Audio Warning System that we ship with these engines do not have a “timer” on the buzzer. When the ignition key is turned on, the buzzer will sound until the engine is started. After the engine is running, the buzzer will shut off. If it doesn’t, check the Engine Oil Pressure, Engine Coolant Temperature or MCM Models: Drive Lubricant Level, MIE Models: Transmission Lubricant Temperature.


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**Timing Engine or Adjusting Carburetor**

Because the Thunderbolt V Ignition Module has Idle Speed Spark Control, it has to be locked in “Base Timing Mode” whenever you:

Set or Check The Timing

Adjust Engine Idle RPM

Adjust Idle Mixture

BEFORE turning ignition key on or trying to start the engine, connect a jumper wire from the Timing Lead (PUR/WHT wire, see wiring diagram) to a good ground. This locks the Module into “Base Timing Mode”. Now any of those three adjustments can be made.

**IMPORTANT: The jumper wire must be connected to the Timing Lead and ground BEFORE turning ignition key on, otherwise the Module will not go into the “Base Timing Mode”.**

▲ Adjustments are made the same way they were done on Thunderbolt IV engines.
The Idle Speed Spark Control in the Module is only active within a certain RPM range. Because of this, engine idle RPM has to be set exactly to the specified RPM shown and in NEUTRAL GEAR. The boat can be either in the water or on a trailer.

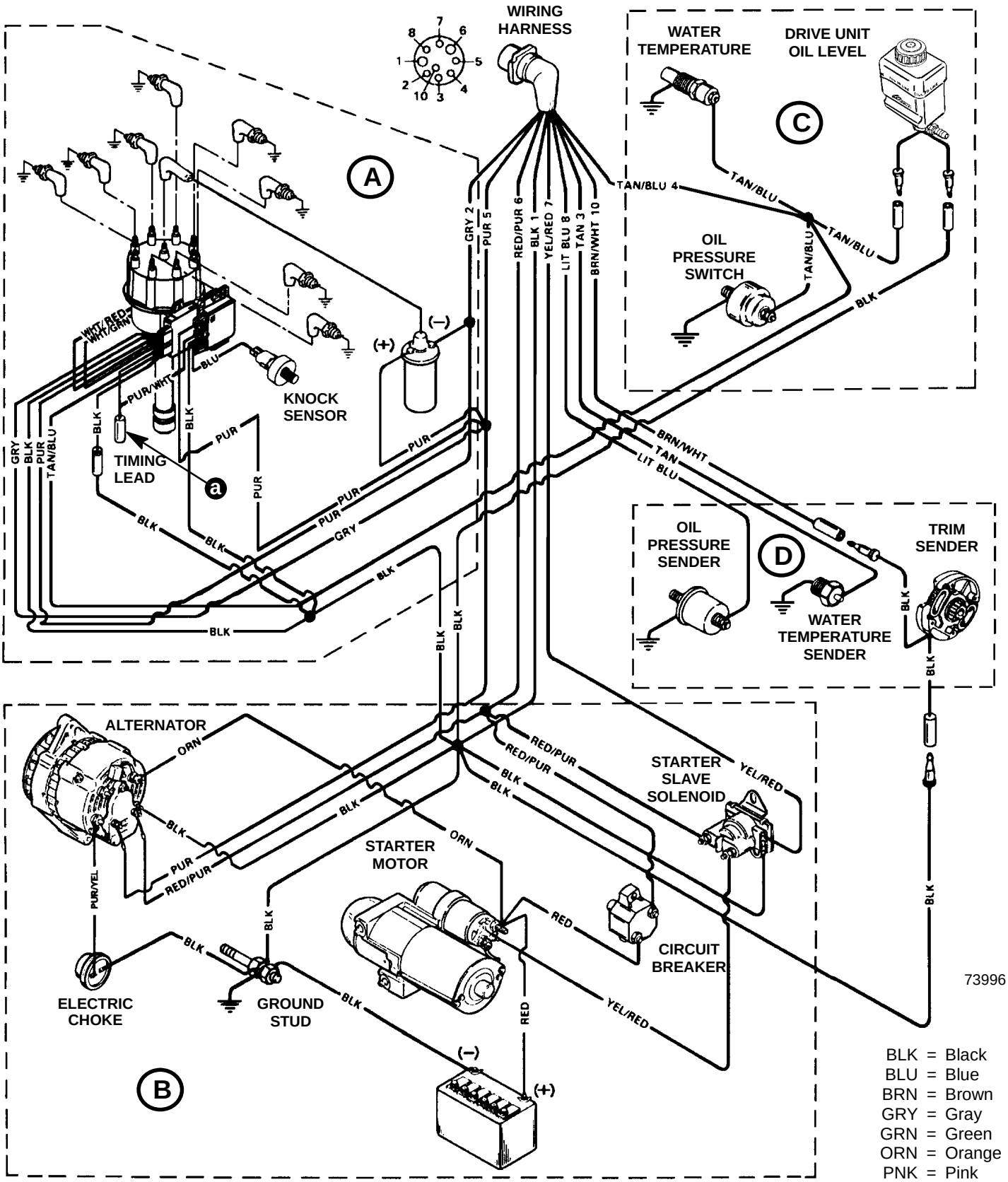
**IMPORTANT: Use an accurate shop tachometer when setting engine RPM because it has to be at an exact RPM in forward gear.**

▲ Timing at Idle RPM: 10° BTDC

▲ Idle RPM in Neutral Gear: 650

**IMPORTANT: Be sure to disconnect the jumper wire between ground and timing lead or ignition will remain in “Base Timing Mode”.**


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BLK = Black
BLU = Blue
BRN = Brown
GRY = Gray
GRN = Green
ORN = Orange
PNK = Pink
PUR = Purple
RED = Red
TAN = Tan
WHT = White
YEL = Yellow
LIT = Light
DRK = Dark

a. Jumper Wire Between Timing Lead and Ground.

**A: Ignition**
**B: Starting, Charging, and Choke**
**C: Audio Warning System**
**D: Instrumentation**


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