

TO: SERVICE MANAGER TECHNICIANS
PARTS MANAGER

No. 87-17

Initial Timing Specification Change For All 3.7 Litre (224 CID) Engines

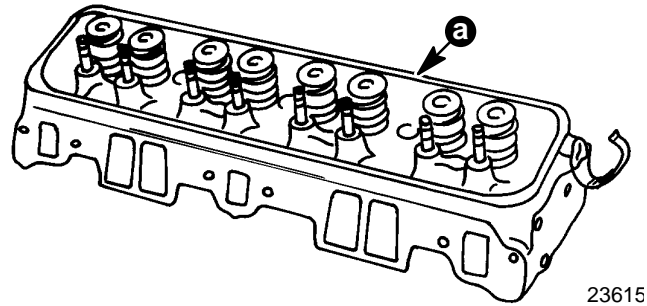
The quality of today's fuels have changed considerably over the last 5-10 years. Because of this, the 3.7 Litre and 3.7 LX Litre MerCruiser engine timing will be set (by the factory) at 4 degree BTDC. The timing specification will be unnoticeable in performance for all practical purposes and allowing for more tolerance to today's fuels.

It is suggested that when a dealer services one of the following engines, the ignition timing be reset to 4 degree BTDC instead of the original 8 degree BTDC. All service manuals will be changed in the future to reflect this timing change.

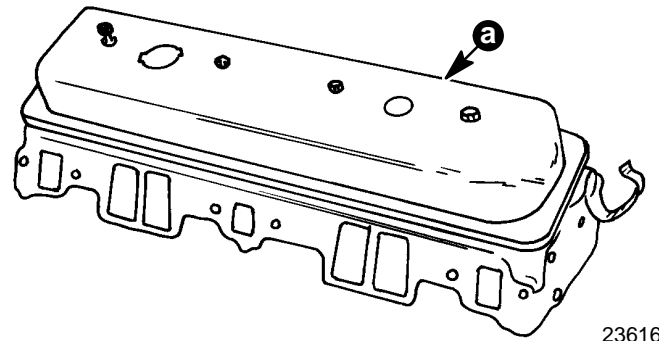
MIE 470
MCM 470
MCM 485
MCM 488
MCM 165
MCM 170
MCM 180
MCM 190
MCM 3.7 Litre
MCM 3.7 LX Litre

Thunderbolt IV HEI Amplifier Identification

In August of 1986 General Motors made a design change to the 305/350 CID engines. Incorporated in this change was a new cylinder head design (Figure 1) and a different spark advance curve. Because the Thunderbolt IV HEI Amplifier controls the advance curve electronically, MerCruiser changed the advance curve of the amplifier to accommodate this change. In August of 1987 MerCruiser also had a cosmetic and electrical design change to the amplifier (Figure 2).

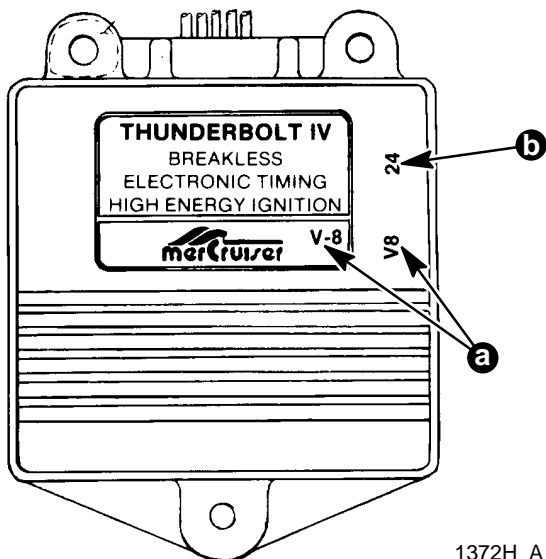


a - Raised Gasket Ridge



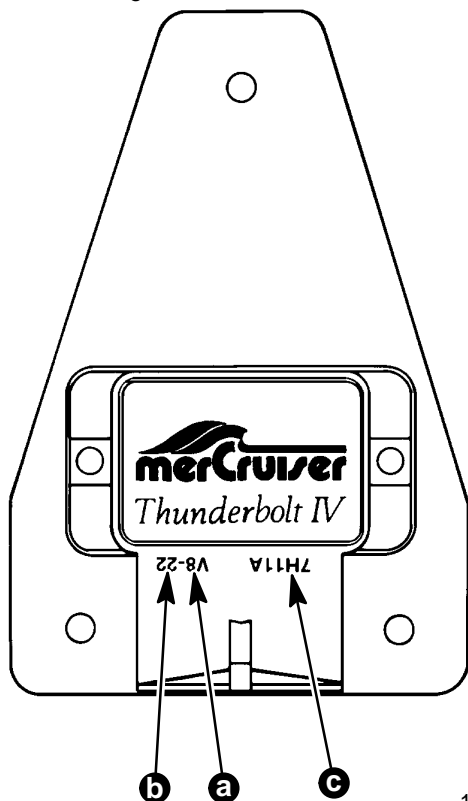
a - New Valve Cover

Figure 1. New Design Cylinder Head



1372H_A

- a - Engine Type
- b - Spark Advance Degrees



1372H_A

- a - Engine Type
- b - Spark Advance Degrees
- c - Vendor Code

Figure 2. Amplifier Identification

The old design amplifier incorporated either the 22 degree or 24 degree advance curve. The amplifiers are marked or stamped for the amount of spark advance (Figure 2).

The new design amplifier will supersede the old design by part number. Care must be taken to install the correct amplifier.

NOTE: Installing the wrong amplifier may result in poor engine performance and/or engine damage.

Following is a list of Engine Model/Serial Number breakdown of amplifier application.

24 Degree Advance Curve

P/N 390-7804A3	Old Design
P/N 15248A1	New Design

22 Degree Advance Curve

P/N 390-9607A3	Old Design
P/N 15899A1	New Design

Engine Model 24 Degree 22 Degree

5.0 Litre/ 200 HP	B530021 & Below	B530022 & Up
5.0LX Litre/ 230 HP	B530160 & Below	B530161 & Up
5.7 Litre/ 260 HP	B525981 & Below	B525981 & Up
350 Magnum/ 270 HP	B530635 & Below	B530636 & Up
320 EFI/ 320 HP	B517602 & Below	B517603 & Up

The V6 (262 CID) engine is using the 14 degree amplifier. The amplifier is superseded to the new cosmetic design.

P/N 390-9355A2	Old Design
P/N 15247A1	New Design

The V8 (454 CID) standard products engines that use the Thunderbolt IV Ignition System use the 24 degree amplifiers.

P/N 390-7804A3	Old Design
P/N 15248A1	New Design

IMPORTANT: Also refer to Item "C" of this service bulletin.

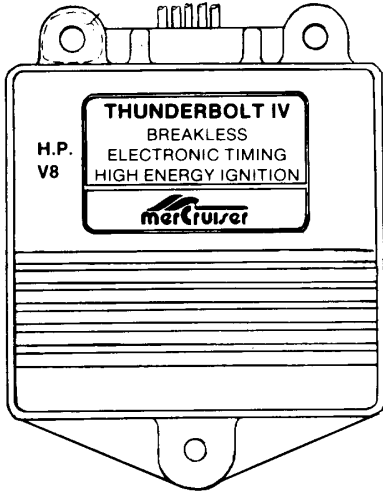
NOTE: Checking the full advance of a running engine, the initial timing degree and the advance curve degree must be combined for a full advanced reading. (Figure 4)

Example: Initial Timing	8 Degrees
Advance Curve	22 Degrees
Full Advance	32 Degrees

Thunderbolt IV HEI Amplifier/ Initial Timing Change HP 420/ HP 575 Models

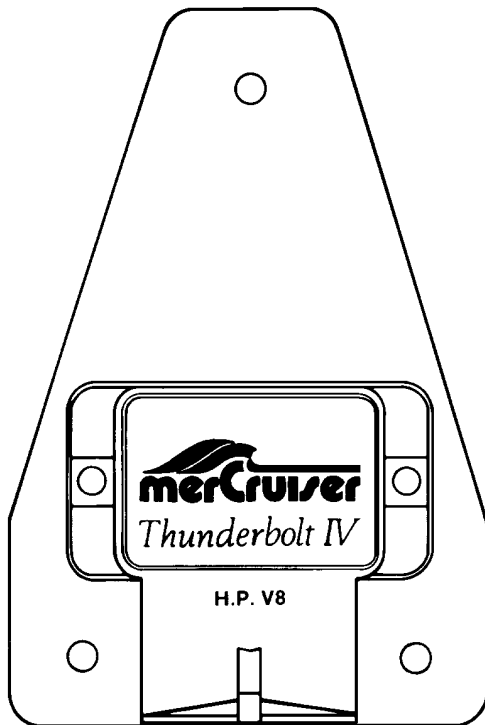
MerCruiser Performance Products is now using an amplifier (P/N 390-9571A1) with a revised advance curve on the HP 420/HP 575 engines. This change allows a better low RPM range performance through the advance curve. The initial timing must be changed using this amplifier. The new specification is 14 degrees BTDC.

Refer to Figure 3 for amplifier identification.



1372H_B

Old Design



1372H_B

New Design
Figure 3.

Early HP 420/HP 575 engines used amplifier (P/N 390-7804A3). When servicing these engines, or replacing the amplifier, the new amplifier can be used. The initial timing must be reset. It is recommended that the old amplifier (P/N 390-7804A3) not be used on the earlier engines if amplifier change is necessary.

Ignition Conversion Kit for MC 370/400 Cyclone/440 Cyclone and 460 Cyclone Engines with Mallory Distributors

Mercury Marine has received many requests from the field for a kit to convert breaker point ignition system (Mallory) to Thunderbolt IV (HEI) System.

An Ignition Conversion Kit (P/N 17336A1) is now available, containing all necessary parts, to convert to the Thunderbolt IV (HEI) System.