

TO: SERVICE MANAGER MECHANICS
PARTS MANAGER

No. 86-17

- A. Borg Warner Gear Ratio Change
- B. Thunderbolt IV HEI Amplifier Identification
- C. Running MerCruiser Engines on Shipping Skids

A. BORG-WARNER GEAR RATIO CHANGE

Borg-Warner has advised MerCruiser that the 1.91:1 reduction transmission will be made no longer available, effective immediately. The new reduction will be 1.88:1. This change was made to reduce noise levels in the transmission. To keep inventory straight at the OEM level all inboard engines shipped with the new ratio will be marked 1.88 in red ink on all four sides of the carton. The 1.91:1 transmission will be no longer available as a replacement part from Quicksilver. If the need arises to replace a 1.91:1 transmission complete the 1.88:1 is a compatible replacement even if the boat has dual engines. The 1.88 ratio will decrease W.O.T. engine RPM by approximately 60 RPM. This drop in RPM on one engine in a dual installation will not affect boat performance. Boat builders should keep their inventory straight to prevent intermixing ratios on new dual installations. Part numbers for the 1.88:1 ratio transmissions are as follows:

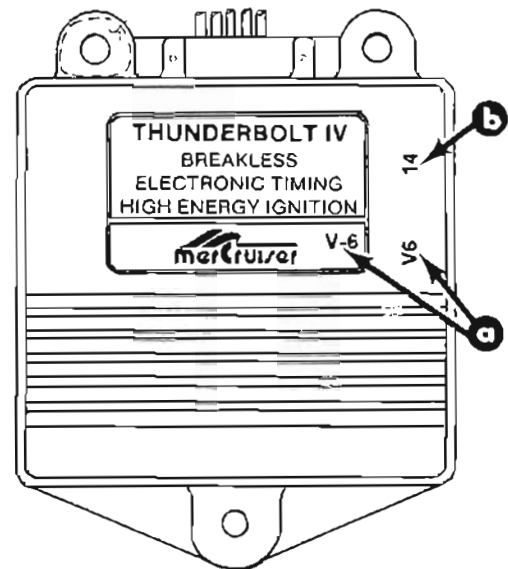
71C (10-17)	Part No. 15855T
72C (10-18)	Part No. 15856T

B. Thunderbolt IV HEI Amplifier Identification

Starting in August of 1986 General Motors will introduce some design changes to the 305 CID and 350 CID blocks. The design changes will incorporate a new cylinder head and different spark advance curves. Because MerCruiser's Thunderbolt IV HEI ignition spark advance is controlled by the ignition amplifier there will be several different versions used. Care must be exercised not to use the wrong amplifier on an engine as poor performance or engine damage may result. Amplifiers will be identified by engine type and degrees of spark advance the amplifier is set for (figure 1).

Amplifiers marked V-6 14 will fit all 262 CID V-6 engines. Amplifiers marked V-8 24 will fit all 454 CID V-8 engines and all 305 and 350 CID engines prior to

the new cylinder head change. Amplifiers marked V-8 22 will fit the 305 and 350 CID engines with the new cylinder head. A future bulletin will be issued with starting serial numbers for engines with the new cylinder heads when this information is available.



a - Engine Model
b - Degrees of Spark Advance

Figure 1. Amplifier Identification

C. RUNNING MERCUISER ENGINES ON SHIPPING SKIDS

The MerCruiser Service Department periodically receives reports from dealers and boat manufacturers of getting water into the rear most cylinders on MerCruiser engines. After further investigation MerCruiser has found these engines were run on the shipping skid and the water and exhaust is being discharged directly out of the exhaust elbow. Because of the design of the exhaust system it is very likely water will be ingested into the rear most cylinders. If anyone wants to continue this practice a minimum of three feet (91cm) of exhaust hose must be attached to the exhaust elbow to eliminate water ingestion. The 224 CID 4 cylinder engines are especially susceptible to this problem and special care should be used.