SERVICE BULLETIN

MERCURY OUTBOARDS

CERTIFIED your assurance of outrtmdinp Service

Number: 76-6
Date : 3/15/76

TO:				"Service Bulletins Binder

TIMING/SYNCHRONIZING/ADJUSTING
1976 MERC 1750-850-500 and 650

(Attach Service Bulletin Sticker on Section 3E Index Page of Your Service Manual.)

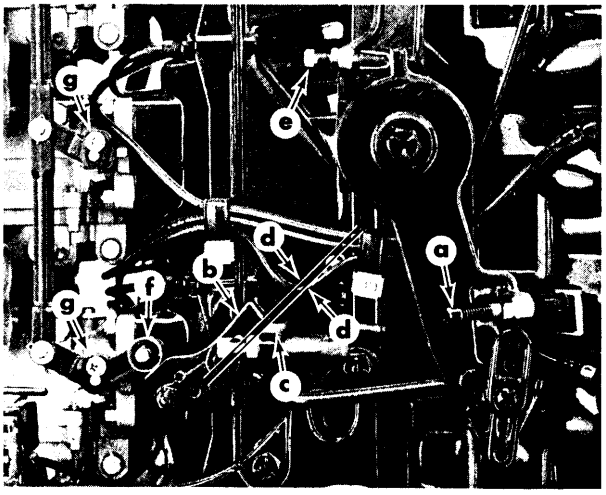
Timing/Synchronizing/Adjusting Instructions in This Bulletin are Temporary. More Complete Instructions with Photos Will Be Printed in the Outboard Service Manual.

1976 Merc 1750 Model

Firing Order	1-2-3-4-5-6
Spark Plug	AC-V40FFM or Champion L76V
Maximum Spark Advance	22° BTDC (2 Punch Marks)
Throttle Primary Pickup	8° to 10° ATDC (3 Punch Marks)
Full Throttle RPM	4800-5800
Idle RPM	550 to 650

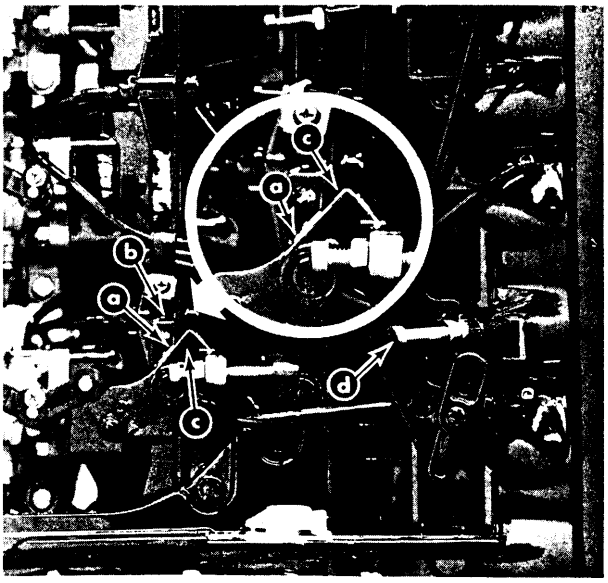
PRIMARY THROTTLE PICKUP

1. If the reed block housing is as shown in Figure **1,** proceed with Step "a", immediately following. If reed block housing is as shown in Figure **2,** proceed with Step **"b".**



a - Idle Stop Screw
b - Throttle Cam
c - Full Throttle Stop Screw **Boss**
d - 1/8"
e - Pickup Timing Screw
f - Roller Arm
g - Synchronization Screws (Upper Screw Not in View)

Figure 1. Throttle Primary Pickup Adjustment



a - Pickup Alignment Line
b - Reed Block Housing Boss
c - Throttle Cam
d - Idle Stop Screw

Figure 2. Throttle Primary Pickup Adjustment

a. With remote control throttle cable disconnected from throttle lever, adjust the idle stop screw to align rear edge of throttle cam to 1/8"(3.2mm) clearance from top front corner of throttle stop boss.
b. With remote control throttle cable disconnected from throttle lever, adjust the idle stop screw to align edge of throttle cam with line on reed block housing.

2. Connect timing light to engine. Hold throttle lever against idle stop screw and crank engine with starter motor while adjusting screw between throttle and spark levers to align 8° to 10° ATDC marks (3 punch marks on flywheel) with notch in window of flywheel cover. Tighten locknut.
3. Loosen 3 throttle synchronization screws and, while holding throttle lever against idle stop screw, move roller arm until roller just touches throttle cam. Tighten 3 screws in throttle linkage.

MAXIMUM SPARK ADVANCE

1. With timing light connected and spark advance arm against spark stop screw, crank engine with starter motor while adjusting spark stop screw to align 2 punch marks on flywheel with notch in window of flywheel cover. Tighten locknut. (Due to spark advance characteristics of this ignition system, this adjustment will result in a spark advance of 22° at 5500 RPM.)

FULL THROTTLE STOP

1. Advance throttle lever to wide open throttle (WOT) and adjust throttle stop screw to allow full carburetor shutter opening but with sufficient clearance (.010-.015[.254-.381mm]) to prevent throttle linkage from binding. Tighten locknut.
2. With throttle lever at wide open throttle, press down on carburetor link rod. Some clearance should exist between the roller and cam. Readjust if necessary.

IDLE SPEED

Readjust idle stop screw to give correct idle speed (550 to 650 RPM in gear).

TANK TESTING

1. Start engine and allow it to warm up. Adjust idle stop screw to attain 550 to 650 RPM (8°-10° ATDC) in forward gear. Tighten locknut.
2. Install throttle cable to engine. Readjust throttle cable barrel if necessary.

1976 MERC 850 MODEL

Spark Plug	**Champion L-76V or AC-V40FFM**
Throttle Primary Pickup	**2° -4° BTDC**
Max. Spark Advance	**27° BTDC**
Full Throttle RPM	**4800-5500 RPM**
Idle RPM	**550-650 (5°-8° ATDC)**

1. Connect timing light and tachometer to engine. With engine running, rotate throttle arm until throttle cam just touches primary pickup pin on carburetor cluster. Turn primary pickup adjustment screw to set spark advance lever at 2°-4° BTDC. Tighten locknut.
2. Rotate spark and throttle arms to 27° BTDC. Adjust maximum spark screw and tighten locknut.
3. Rotate throttle arm to WOT (wide open throttle) and adjust throttle stop screw to allow full carburetor shutter opening. Allow sufficient clearance (.010-.015 [.254-.381mm]) to prevent throttle linkage from binding. Tighten locknut.

4. Move spark and throttle arms to retard spark and set idle at 550-650 RPM (5°-8° ATDC). Adjust idle screw and tighten locknut.

1976 **Merc** 500 **Model**

Spark Plug	Champion L-76V or AC-V40FFM
Max. Spark Advance	32° BTDC
Throttle Primary Pickup	7° to 9° BTDC
Full Throttle RPM	4800-5500
Idle RPM	500 to 650 (3°-5° ATDC)

PRIMARY THROTTLE PICKUP

1. Connect timing light and tachometer to engine. With engine running, move spark and throttle arms to retard spark and set idle at 550 to 650 RPM (3°-5° ATDC). Adjust screw and tighten locknut.
2. Advance spark and throttle arms to 7° to 9° BTDC. Slide throttle actuator plate so that cam just touches primary pickup arm on carburetor cluster. Tighten 2 screws.

MAXIMUM SPARK ADVANCE

1. Advance spark and throttle arms to 32° BTDC. Adjust stop screw and tighten locknut.
2. Adjust throttle pickup screw on throttle actuator so that it just touches secondary pickup on carburetor cluster. Tighten locknut.

FULL THROTTLE STOP

1. Advance throttle arm to wide open throttle (WOT). Adjust throttle stop screw to allow full carburetor shutter opening. Allow sufficient clearance (.010 to .015[.254-.381mm]) to prevent throttle linkage from binding. Tighten locknut.
2. Retard throttle arm against idle stop screw. Check for throttle shutter synchronization. Both shutters must be in a closed position and open simultaneously.

1976 MERC 650 **(with Distributorless Ignition)**

Firing Order	1-2-3
Firing Sequence	1200 Consecutive
Spark Plug	AC-V40FFM or Champion L-76V
Spark Plug Gap	Not Adjustable
Timing Maximum Advance	23° BTDC @ 5300 RPM
Throttle Primary Pickup	6° to 8° BTDC
Throttle Secondary Pickup	Not Adjustable
Full Throttle RPM	4800-5300 RPM
Idle RPM	550-650 RPM (6°-8° ATDC)
Water Pressure	3 Plus PSI @ 2000 RPM

TIMING ADJUSTMENTS

1. Place engine in a test tank and connect electrical harness to engine.
2. Connect Timing Light (C-91-35507) by connecting red lead to **No.** 1 (top) spark plug arid connecting black leads to 12-volt battery positive (+) and negative (-) posts.
3. Pre-set carburetor idle mixture screws at 1¾ to 1¾ turns out from seated position.
4. Crank engine with starter motor while moving throttle lever to align throttle primary pickup specification on timing decal with timing pointer. Without moving throttle lever, adjust the screw between the throttle arid spark levers so that the throttle actuator cam just touches the

carburetor throttle cluster pin and tighten locknut.

5. Crank engine with starter motor while moving throttle lever to align 28 BTDC mark on timing decal with timing pointer. Adjust maximum spark stop screw to just touch spark arm and tighten locknut. Recheck maximum spark advance.

NOTE: Due to electronic characteristic of this ignition system, setting the maximum spark advance at 28° BTDC at cranking RPM will result in a maximum spark advance of 23° at 5300 RPM.

6. Move throttle lever to wide-open-throttle and adjust throttle stop screw to allow full carburetor shutter opening but so that carburetor shutter does not act as a stop. Allow .010" to .015" (.254mm to .381mm) clearance between throttle actuator cam and carburetor cluster pin with throttle lever against throttle stop screw. Tighten locknut.
7. Move throttle lever to idle position and remove timing light.

CARBURETOR ADJUSTMENTS

1. Connect fuel line to engine. Start engine and allow it to warm up in forward gear.
2. Adjust carburetor idle mixture screws to attain best idle in forward gear.
3. Adjust idle RPM to specification in forward gear and tighten locknut.