



# service bulletin

No. 93-20

## 1994 225 Update

### Mariner and Mercury

1994 225

S/N 0D280813 Thru 0G051934

### SERIAL NUMBER GROUPS AND ITEMS REQUIRING UPDATING

#### Update Group #1

0D280813 thru 0G001038

- New Spark Plugs
- Open Drain Holes
- Retorque Water Pump Bolts
- New CDM's
- New Drive Shaft Seal
- Drill Drive Shaft Housing
- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #2

0G001039 thru 0G005789

- Open Drain Holes
- Retorque Water Pump Bolts
- New CDM's
- New Drive Shaft Seal
- Drill Drive Shaft Housing
- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #3

0G005790 thru 0G017175

- Retorque Water Pump Bolts
- New CDM's
- New Drive Shaft Seal
- Drill Drive Shaft Housing
- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #4

0G017176 thru 0G029273

- New CDM's
- New Drive Shaft Seal
- Drill Drive Shaft Housing
- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #5

0G029274 thru 0G029535

- New Drive Shaft Seal
- Drill Drive Shaft Housing
- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #6

0G029536 thru 0G041724

- Move Starter Rope Packet
- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #7

0G041724 thru 0G051096

- New Carburetor Main Jets
- New Alternator Plug Clamp

#### Update Group #8

0G051097 thru 0G051934

- New Alternator Plug Clamp

Listed are items to be updated on early production 225hp outboards. Improvements are being offered to current owners and are to be made on outboards in dealer inventory to provide improved reliability, durability and performance. The updated items listed have been implemented on production outboards as running changes.

## OWNER NOTIFICATION:

All US and Canadian registered owners of 225 models within the serial numbers listed will be sent a letter advising them to return their outboard(s) to an authorized dealer for updating. A copy of the US letter is included in this bulletin. International distributors will be advised on the outboards affected by a letter from their Marine Power International service representative.

## SPARK PLUG

S/N 0D280813 Thru 0G001038

Replace all six BP8H-N-10 spark plugs with BPZ8H-N-10 inductor spark plugs p/n 33-816837--2 to prevent a false warning horn. Refer to Service Bulletin 93-17.

## OPEN DRAIN HOLES - DRIVE SHAFT HOUSING

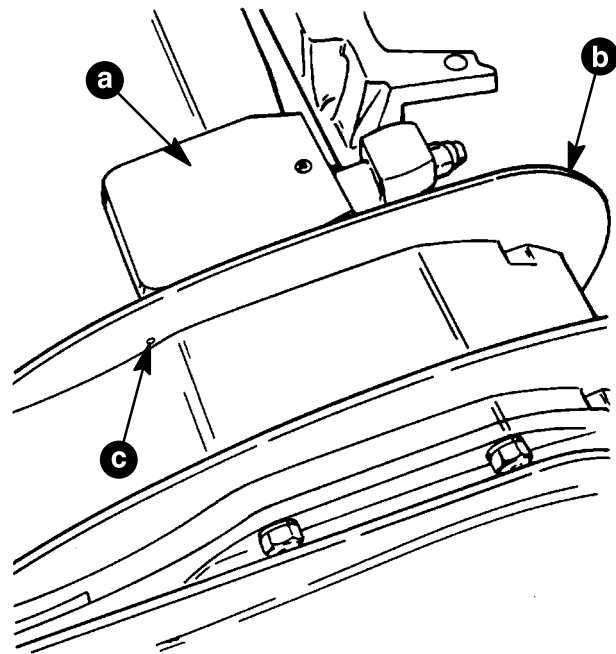
S/N 0D280813 Thru 0G005789

Inspect and, if necessary, remove the thin layer of aluminum covering the drive shaft housing drain holes. The drain holes are 1/8 inch (3.2 mm) in diameter. They are located under the splash plate on BOTH sides of the drive shaft housing and directly below the rear edge of lower mount cover. The holes allow water to drain from around the exhaust tube, when the engine is not running.

Failure to allow the water to drain from the cavity will cause the drive shaft housing to:

- corrode prematurely on the inside of the cavity in salt water.
- crack/break due to the formation of ice when exposed to freezing temperatures.

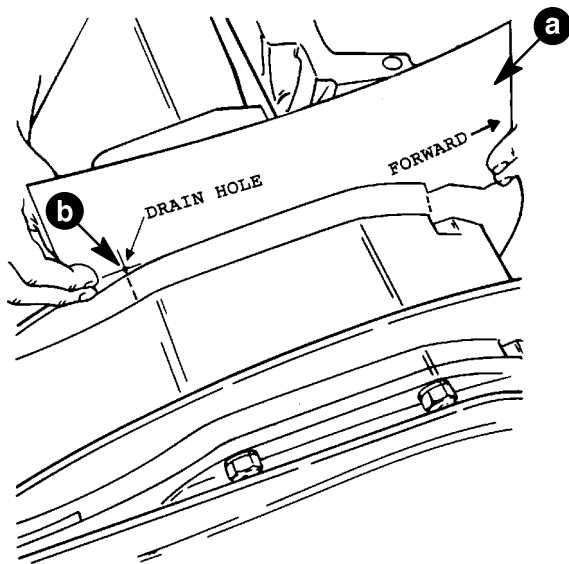
The performance of the engine is NOT affected if the drain holes are not open.



- a. - Lower Mount Cover
- b. - Splash Plate
- c. - Drain Hole

**Figure 1. Drain Hole Location View.**

If either of the drain holes are not open, use the template provided to locate and open the drain holes. One template is provided for use on both sides of the drive shaft housing. Cut the template on the dotted line, punch a small hole in the center of the hole location dot, position the template on the drive shaft housing and mark the hole locations on BOTH sides of the drive shaft housing.



- a. - Template.
- b. - Drain Hole Location.

### Figure 2. Template

The material covering the cast-in drain holes is very thin and requires very little effort to remove. A small pointed punch and hammer are the best tools to break away the material covering the cast-in hole.

Paint the exposed aluminum edges of the hole to prevent corrosion. Illustrations are printed on the attached template.

### RETORQUE WATER PUMP ATTACHING BOLTS

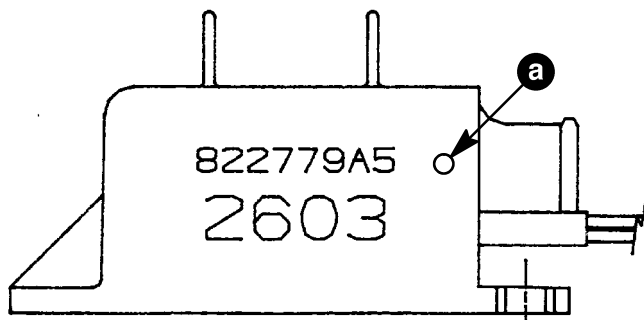
S/N 0D280813 Thru 0G017175

Retorque water pump attaching bolts to 60 Lb. in. (6.7 N·m).

### REPLACE ALL SIX CAPACITOR DISCHARGE MODULES (CDM)

S/N 0D280813 Thru 0G029273

Replace all six CDM's. The improved CDM's are marked with a white dot after the cast-in part number or have a date code 2603 and above. Service part number is 822779A-2.



- a. - Location of White Dot.

Figure 3. Side View of CDM.

### INSTALL NEW DRIVE SHAFT SEAL

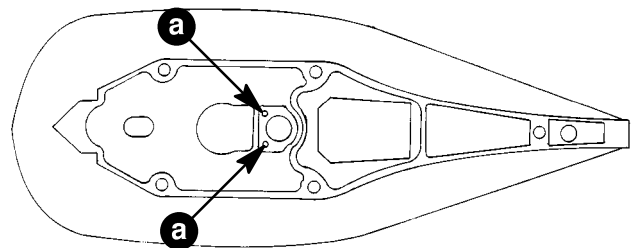
S/N 0D280813 Thru 0G029535

Install a new drive shaft seal above the water pump. The seal and installation tool are included with the seal kit p/n 26-816575A-2. Retain the tool for future use as it is not available separately. The installation tool allows easy and accurate installation of the seal. In an emergency only, the seal may be positioned manually. The top of the seal should be 0.315 - 0.330 inch (8.0 - 8.4 mm) above the top of the water pump housing. This seal is not shown in any of the parts or service literature today because it was a late addition. Service manual and parts manual revisions are in process.

### DRILL DRIVE SHAFT HOUSING

S/N 0D280813 Thru 0G029535

Remove the gear housing and drill two 0.250 inch (6.4 mm) water inlet holes. Drill the holes from the bottom side of the drive shaft housing in the flat area of the housing forward of the water tube. A drill extension or 12 inch (304.8 mm) long drill is required.



- a. - Drill Two .250 Inch (6.4 mm) Holes.

Figure 4. Bottom View of Drive Shaft Housing.

### MOVE STARTER ROPE PACKET TO STARBOARD SIDE OF COWL

S/N 0D280813 Thru 0G041724

The starter rope and packet from first production start thru s/n 0G041724 were installed on the port side of the top cowl and may interfere with the carburetor linkage. Move the existing packet assembly to the starboard side of the cowl. Using the cuts in the foam as a guide, peel the section of foam back to release the packet retaining band. Peel the matching section of foam back on the starboard foam, insert the packet and hot glue the starboard and port foam sections in place.

**INSTALL NEW CARBURETOR MAIN JETS IN  
WMH 19 CARBURETORS**

S/N 0D280813 Thru 0G051096

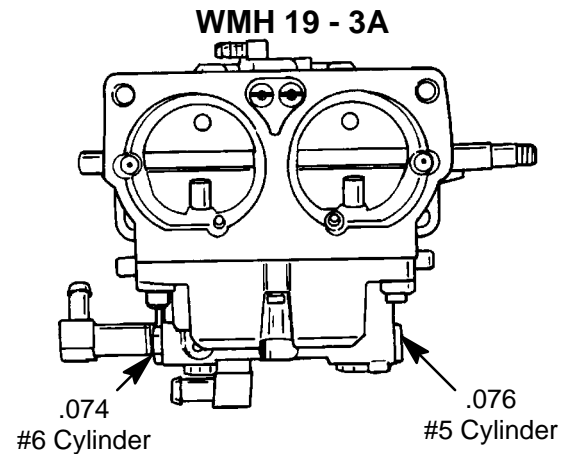
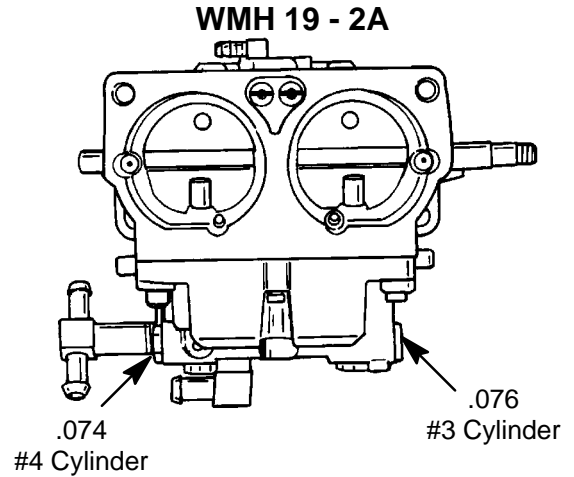
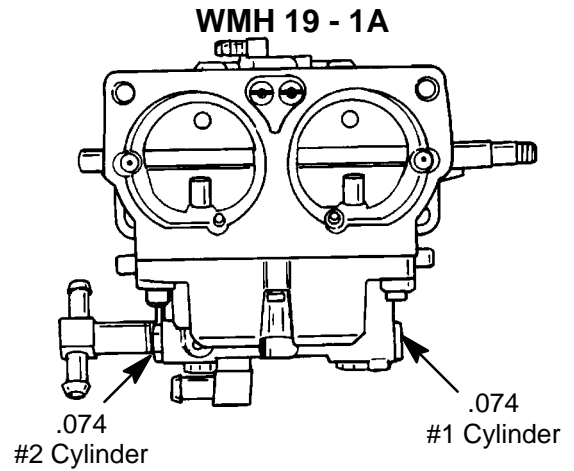
Install new main fuel jets for improved performance and optimized fuel economy. #1, #2, #4 and #6 cylinders require 0.074 main fuel jet (#4 Cylinder already has 0.074 main fuel jet installed). #3 and #5 cylinders require 0.076 main fuel jet. The main fuel jet is located behind the access plug. Order three (3) 0.074 jets p/n 1399-3794. Order one (1) 0.076 main fuel jet p/n 1399-3796 and use one (1) 0.076 jet that was removed from #6 cylinder location. Carburetors installed beginning with serial number 0G051097 have the new jets and are stamped with an "A".

**CARBURETOR NUMBERS**

<u>Previous</u>	<u>New</u>
WMH 19-1	WMH 19-1A
WMH 19-2	WMH 19-2A
WMH 19-3	WMH 19-3A

**MAIN FUEL JETS**

<u>Cylinder</u>	<u>Previous</u>	<u>New</u>
1	.078	.074
2	.078	.074
3	.078	.076
4	.074	.074
5	.080	.076
6	.076	.074



**Figure 5. Front View with Air Box Removed.**

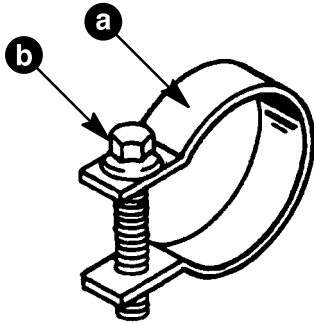
**IDENTIFICATION:**

Color the head of the main fuel jet access plugs black with a permanent marker to identify the jet change.

**INSTALL CLAMP ONTO ALTERNATOR ELECTRICAL PLUG**

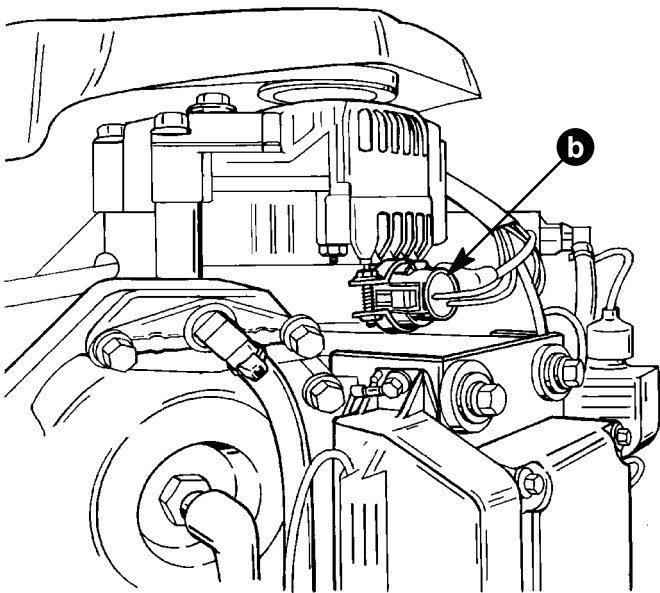
S/N 0D280813 Thru 0G051934

Install clamp and screw on the alternator electrical plug to prevent movement, due to vibration. Screw torque is 27 Lbs. In. (3 N-m).



- a. - Clamp P/N 826188
- b. - Screw P/N 10-821045-20

**Figure 6. Alternator Plug Clamp**



52720

- a. - Clamp Position.
- b. - Alternator Plug.

**Figure 7. Alternator Plug Location.**

**WARRANTY ON UPDATE ITEMS:**

Complete a warranty claim listing:

Quantity and part number of parts used.

Labor Rate Code	Labor Hours	Failure Code	Update Items
NJC	.2	320-40	Replace Spark Plugs P/N 33-816837--2
NJC	.5	207-40	Open Drain Holes
NJC	.5	306-40	Replace All SIX CDM's P/N 822779A2
NJC	.2	609-40	Retorque Water Pump Attaching Bolts
NJC	.2	233-40	Install New Drive Shaft Seal P/N 26-816575A2
NJC	1.0	207-40	Drill Drive Shaft Housing
NJC	.2	336-40	Move Starter Rope Packet
NJC	.5	705-40	Install New Carburetor Main Jets Qty. 3 P/N 1399-3794 Qty. 1 P/N 1399-3796
NJC	.3	332-40	Install Alternator - Electrical Plug Clamp P/N 826188 and 10-821045-20



A BRUNSWICK COMPANY

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FOND DU LAC, WI 54936-1939 U.S.A.  
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December, 1993

Dear Customer

Our records indicate that you are the owner of a new 225-HP Outboard. We trust that you are enjoying it's fine features and world class performance. Several product improvements have been made on the 225 since your Outboard was built. Improvements include:

- New high energy ignition modules for a stronger spark.
- Cooling system changes to enhance water flow
- New spark plugs to help suppress radio frequency interference.
- New carburetor jets to improve performance and optimize fuel economy.

We would like to make these improvements on your Outboard to provide you with their additional reliability, durability and performance benefits. The improvements are external in nature and do not require disassembly of the powerhead or gearhousing internals.

#### WHAT YOU SHOULD DO

Contact your authorized dealer, preferably the dealer who sold you the Outboard. Make an appointment to have the Outboard updated per Service Bulletin 93-20. Then, deliver your boat and this letter to your dealer at the appointed time. The reverse side of this letter is a warranty claim form that the dealer needs to send to us for reimbursement for the work done.

#### WHAT WILL WE DO

We will reimburse the dealer for the update. You will not be charged for either the part(s) or labor.

We are happy to offer these product improvements to you at no charge so that you can enjoy the benefits of our latest technology. All you have to do is arrange for a service appointment with your dealer and deliver the Outboard to the dealer. You may continue to operate your Outboard until the update can be done. However, please have the update completed soon to gain the additional reliability, durability and performance benefits available. Please call Outboard Technical Service at 414-929-5040 if you have any questions or concerns.

Best Regards,

Bob Kachelek  
Director Outboard Service  
Mercury/Mariner/Force Outboards