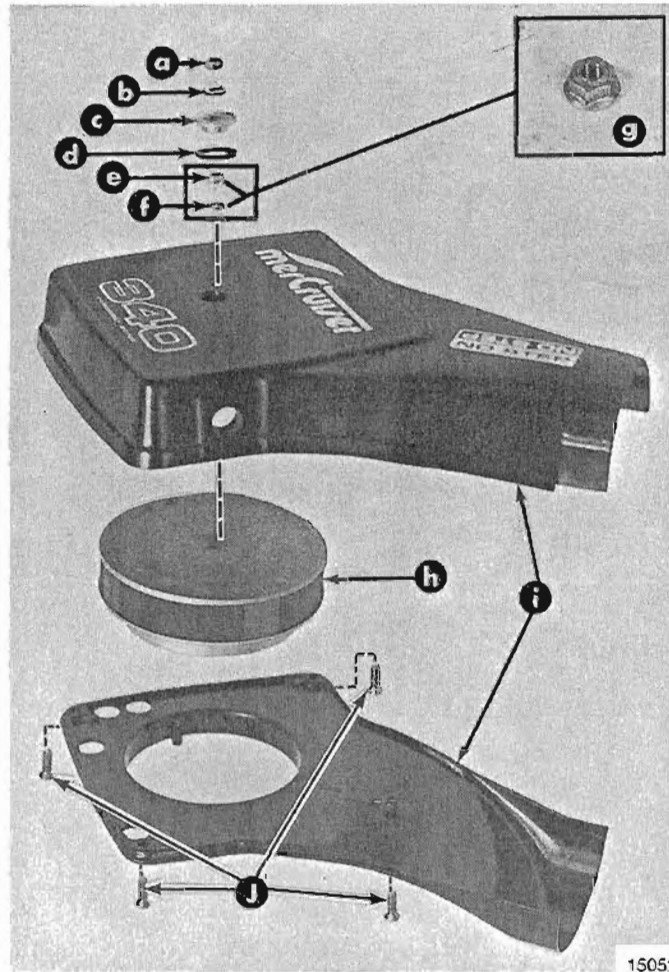


- A. Removal of Air Silencer and Flame Arrestor - MIE 170/230/260/340
- B. Cleaning Flame Arrestor and Crankcase Ventilation Hoses
- C. Cleaning Heat Exchanger On Closed Cooling System - All Models
- D. Air Pocket Bleed Hose - MIE 230/260/340

CIRCULATE TO:
 SERVICE MANAGER
 PARTS MANAGER
 MECHANICS

A. REMOVAL OF AIR SILENCER AND FLAME ARRESTOR - MIE 470/230/260/340

When removing Air Silencer and Flame Arrestor (as a complete unit) on the models listed above, care must be taken so washer ("f" in Figure 1) does not drop unnoticed into Air Silencer. This washer could then drop into throat of carburetor during reassembly. A new flange nut ("g" in Figure 2) will be used instead of nut and washer ("e" and "f" in Figure 1) on later production engines.



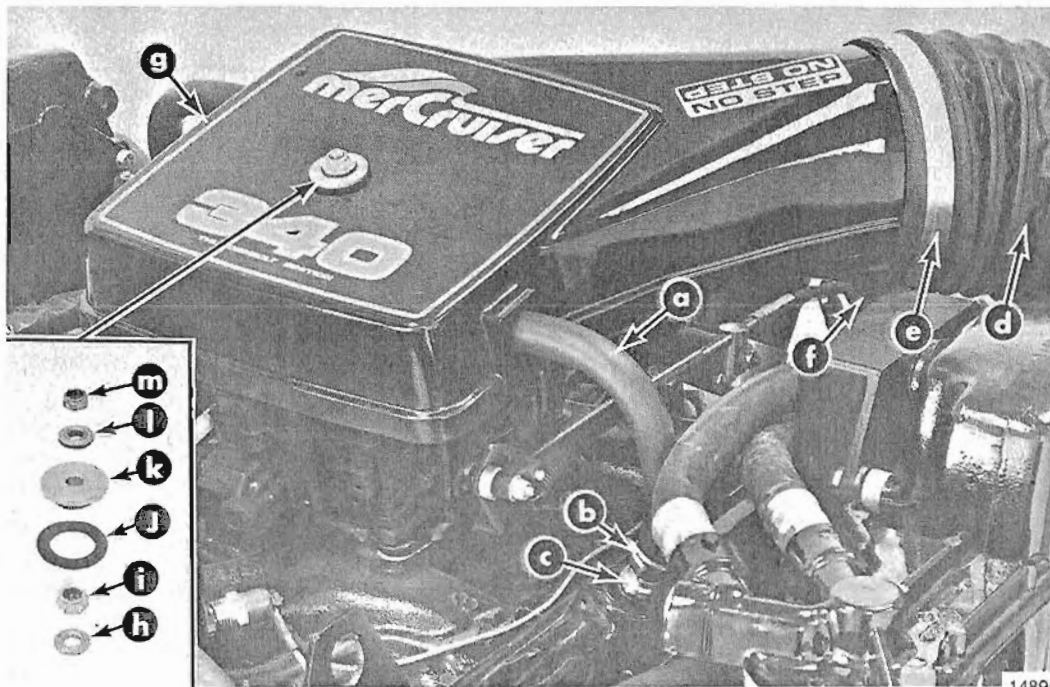
- a b c d - Hold Air Silencer and Flame Arrestor Assembly Onto Carburetor
- e f or g - Hold Flame Arrestor Onto Carburetor
- h - Flame Arrestor (Inside "i")
- i - Upper and Lower Half of Air Silencer
- j - Screws That Hold Air Silencer Halves Together

Figure 1. Air Silencer and Flame Arrestor Assembly

B. CLEANING FLAME ARRESTOR and CRANKCASE VENTILATION HOSES

1. Remove crankcase ventilation hoses from air silencer and valve rocker arm covers.
2. Loosen hose clamp and disconnect air intake hose from air silencer.
3. Remove elastic stop nut, sealing washer, bushing and rubber washer which secures air silencer to carburetor. Remove elastic stop nut and flat washer which secures flame arrestor (on inside of air silencer) to carburetor. then, remove air silencer and flame arrestor assembly.
4. Blow out flame arrestor with compressed air to remove any debris that may have collected in it.
5. Clean inside of crankcase ventilation hoses by running a cloth thru them. Use a wire or cord to pull cloth thru hose. Clean hose fittings with solvent and dry with compressed air.
6. Inspect hoses and replace if cracked or they show signs of deterioration.
7. Place air silencer and flame arrestor assembly on carburetor. Secure flame arrestor with elastic stop nut at this time.
8. Reconnect air intake hose to air silencer. Secure hose with hose clamp, being sure to position clamp around air silencer brace. After tightening hose clamp, tighten air silencer attaching nut (installed in Step 7) until air silencer is secure. **DO NOT OVERTIGHTEN OR AIR SILENCER MAY CRACK.**
9. Reinstall crankcase ventilation hoses between air silencer and rocker arm covers. Use a soap and water solution, if necessary, to ease installation of hose in air silencer.

CAUTION: Check to make sure that air intake hose inlet is a minimum of 12" (30.5cm) above bottom of bilge (to prevent bilge water from being drawn into engine).



a - Crankcase Ventilation Hose (One Each Side)
 b - Hose Clamp (One Each Side)
 c - Fitting Ventilation Hose to Valve Rocker Arm Cover (One Each Side)
 d - Air Intake Hose (See "Caution" Preceding)
 e - Hose Clamp Air Intake Hose Attaching
 f - Air Silencer Brace

g - Air Silencer and Flame Arrestor Assembly
 h - Flat Washer (See "Note" Below) } Flame Arrestor
 i - Elastic Stop Nut } Attaching
 j - Rubber Washer
 k - Bushing
 l - Sealing Washer } Air Silencer
 m - Elastic Stop Nut } Attaching

NOTE: On later engines, flange nut will secure flame arrestor.

Figure 2. Air Silencer and Flame Arrestor Assembly

C. CLEANING HEAT EXCHANGER ON CLOSED COOLING SYSTEM - All Models

1. Drain seawater section of cooling system.
2. Remove bolts, which secure end plates to heat exchanger, and remove end plates. Remove end plate gaskets and seal washers.

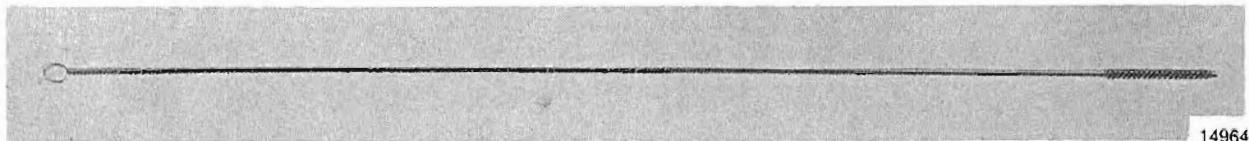
CAUTION: DO NOT use an object with sharp corners or without a brush to clean heat exchanger tubes (in next step), as damage to tubes may result.

3. Clean tubes in heat exchanger by running a suitable wire brush (similar to one shown in Figure 1) thru each tube.
4. Rinse out heat exchanger tubes with a water hose to remove loosened particles.

NOTE: Apply Perfect Seal to both sides of NEW end plate gaskets when installing in next step.

5. Reinstall end plates, using new end plate gaskets and seal washers. (Install seal washers between end plate gaskets and end plates.)
6. Re-torque the end plate screw(s) as follows:
3" (76.2mm) diameter exchanger tank: 24-60 lb. in. (2.7-6.7 N.m.)
4" (101.6mm) and 5" (127.0mm) diameter exchanger tank: 36-72 lb. in. (4.1-8.1 N.m)
7. Start engine and check heat exchanger hose connections and gaskets for leaks.

NOTE: Heat exchanger cleaning brush (shown in Figure 3) can be obtained by ordering Part No. 01299 from the Schaefer Brush Manufacturing Co., Inc., 117 West Walker Street, P.O. Box 04155, Milwaukee, WI 53204. Approximate cost: \$3.50.

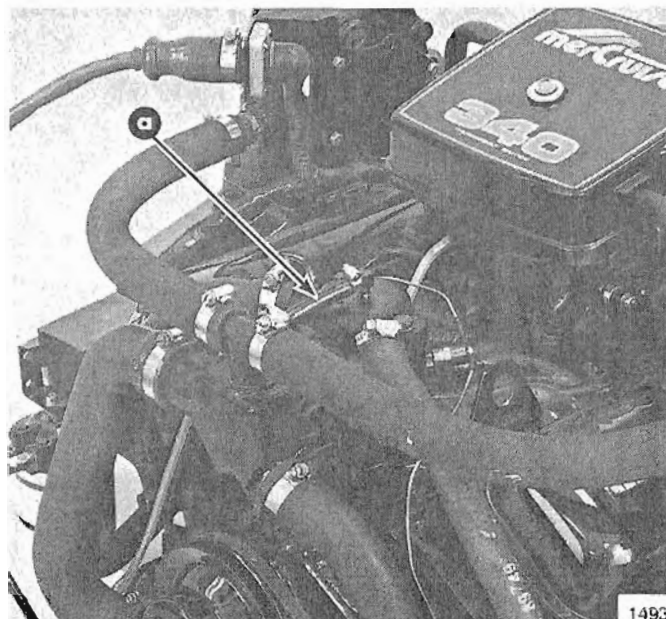


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Figure 3. Heat Exchanger Cleaning Brush

D. AIR POCKET BLEED HOSE - MIE 230/260/340

If engines listed above run hotter than normal at idle speeds, make sure air pocket bleed hose or fittings (Figure 4) are not plugged. ENGINES WITH A CLOSED COOLING SYSTEM DO NOT USE this bleed hose.



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a - Air Pocket Bleed Hose

Figure 4. Air Pocket Bleed Hose