

Date: 03/28/02

Engine Make: OMC

Model Yr. 1987- 1995

Engine Application: 4.3L V-6

ORCA
MARINE COOLING SYSTEMS
BELLINGHAM, WA

Installation Instructions

Orca Kit Number: 300006

Type of System: Horizontal Mount / Half System

SPECIAL ENGINE FEATURES:

Instructions are given as viewed from the rear of the engine

1. Drain engine coolant. Remove existing thermostat housing. Remove and discard the 1 $\frac{3}{4}$ " hose from the front of the engine.
2. Clean the gasket surface and install new 5A riveted gasket (this gasket is critical for electrical continuity),
3. Next install the three-hole housing (recess up), a №.5 gasket, KA015 water outlet and spacer as shown in diagram. The bolt for the spacer is $\frac{3}{8}$ " x 3 $\frac{3}{4}$ " and the other bolt is $\frac{3}{8}$ " x 2 $\frac{1}{4}$ ". Use a $\frac{3}{8}$ " lock washer under each bolt head. Secure the support arm between the lock washer and the spacer on the right side as shown in drawing.
4. Install the $\frac{3}{8}$ " NPTM x $\frac{5}{8}$ " 90° brass hose fitting into the center hole of the three-hole housing. Point the fitting toward the right side of the engine. Install $\frac{3}{8}$ " NPTM brass pipe plugs in remaining holes.
5. Remove the $\frac{1}{2}$ " plug from the upper side of the circulating pump and replace it with the $\frac{1}{2}$ " NPTM x $\frac{5}{8}$ " brass hose adapter. Connect the two hose adapters with the $\frac{5}{8}$ " x 16" wire hose. If you are installing a cabin heater refer to step 13.
6. Remove the outside bolt from the power steering bracket and replace with the $\frac{3}{8}$ " x 1 $\frac{3}{4}$ " bolt, $\frac{1}{4}$ " aluminum spacer and bracket KA106 as shown.
7. Remove the bolt under and to the left of the fuel filter bracket. Replace with bracket KA103 and the $\frac{3}{8}$ " x 1 $\frac{3}{4}$ " bolt.
8. Slip the 1 $\frac{1}{2}$ " 90° rubber elbow (some cutting may be required to fit properly) onto the thermostat housing with the opening forward. As you place the heat exchanger on the brackets, ease the 1 $\frac{1}{2}$ " fitting into the hose. Secure hose with №.24 clamps provided. Secure the heat Exchanger with two №.80 clamps provided.
9. Connect the 1 $\frac{3}{4}$ " coolant return fitting on the circulating pump and the 1 $\frac{3}{4}$ " fitting on the Heat Exchanger with the 1 $\frac{3}{4}$ " 90° hose. Secure with the two №.32 clamps provided.
10. The 1" hose coming from the stern drive connects to the 1" fitting on the right side of the Heat Exchanger. Slip the 1" x 8" heater hose over the 1" hose fitting on the left end of the Heat Exchanger.
11. Set the copper tee on the engine with the long 1" hose fitting facing the right side of the engine and behind the alternator and thermostat housing. Connect the 1" hose from the front of the right side manifold to the long 1" hose fitting on the tee. Measure and cut the hose from the port manifold to fit onto the short branch of the tee. Slip the tee into the 1" hose coming from the Heat Exchanger. Secure all with №.16 clamps provided. Secure the copper tee to the spacer installed on the thermostat housing with the ties provided.
12. Check all clamps for tightness. Fill system with a 50/50 mix of water and antifreeze. Idle to temperature and top off if necessary. Check for leaks.
13. Cabin heater: Run a hose from the top fitting of the heater to the circulating pump fitting. The lower heater fitting connects to the $\frac{3}{8}$ " NPTM x $\frac{5}{8}$ " 90° brass hose fitting at the center hole of the three-hole housing.

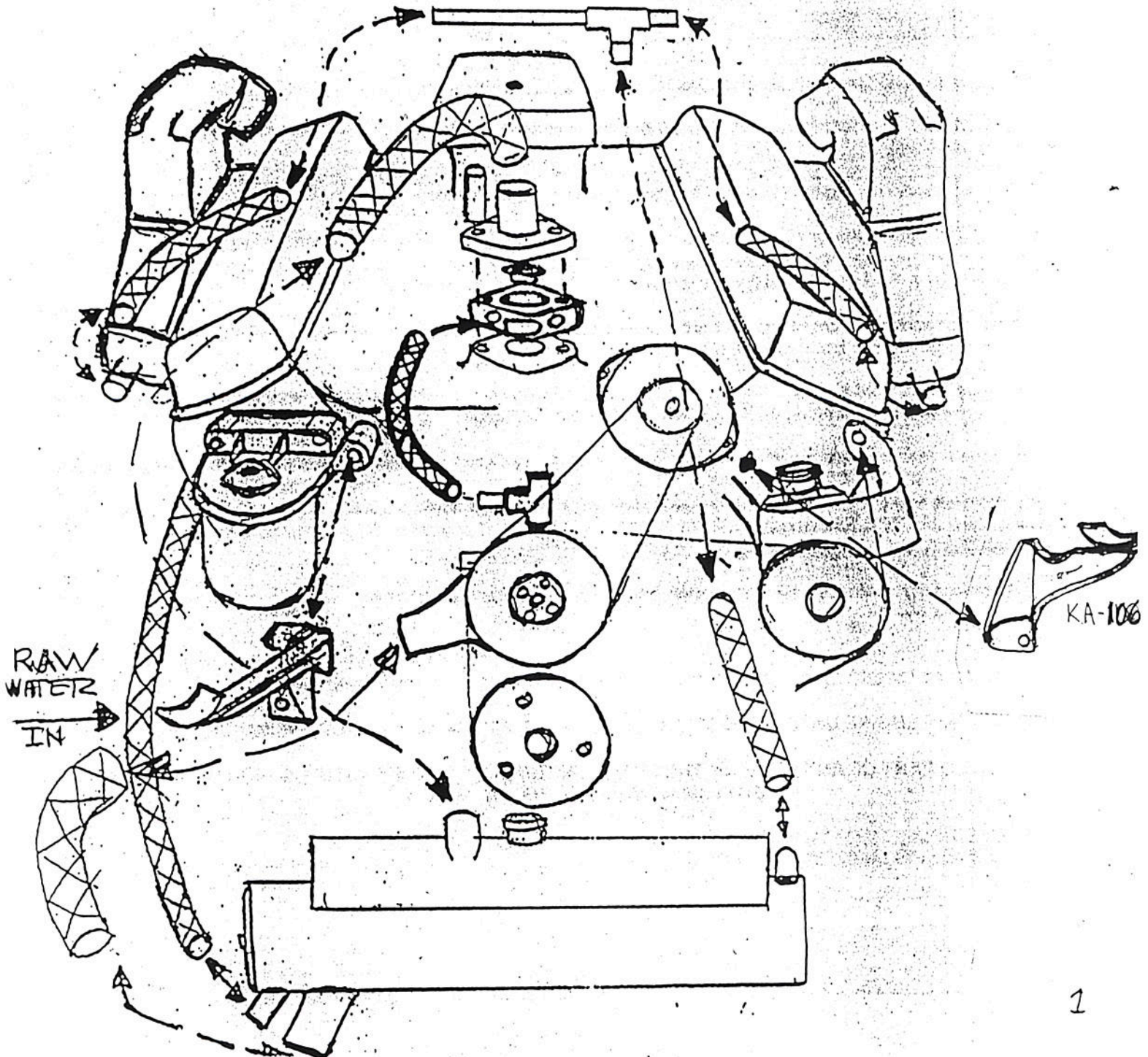
DO NOT RUN ENGINE UNLESS A SOURCE OF WATER IS ATTACHED TO THE RAW WATER PUMP.

MAKE SURE NO PART OF ANY HOSE ON THE FRESH WATER SIDE OF THE SYSTEM IS HIGHER THAN THE BOTTOM OF THE EXPANSION TANK.

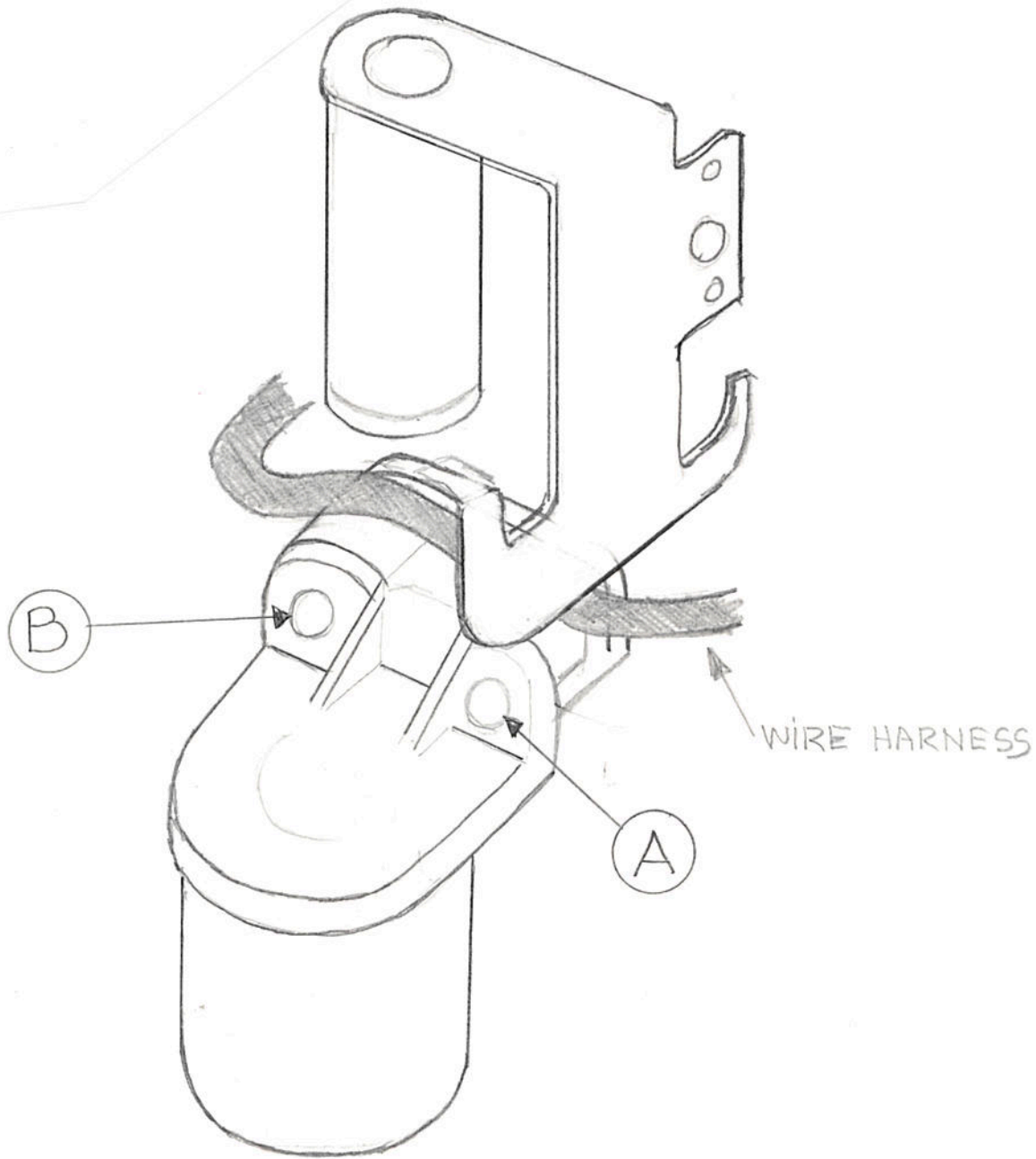
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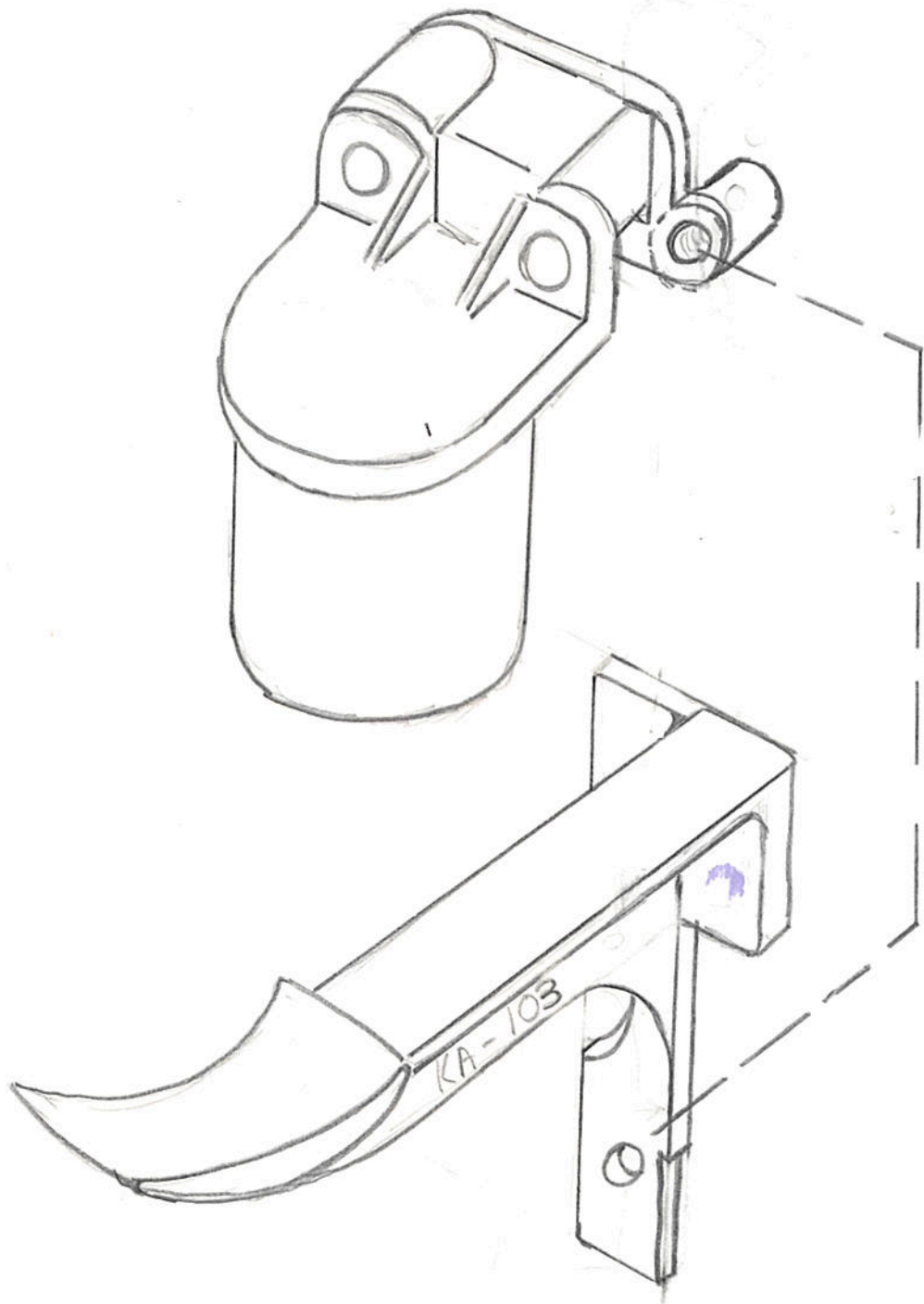
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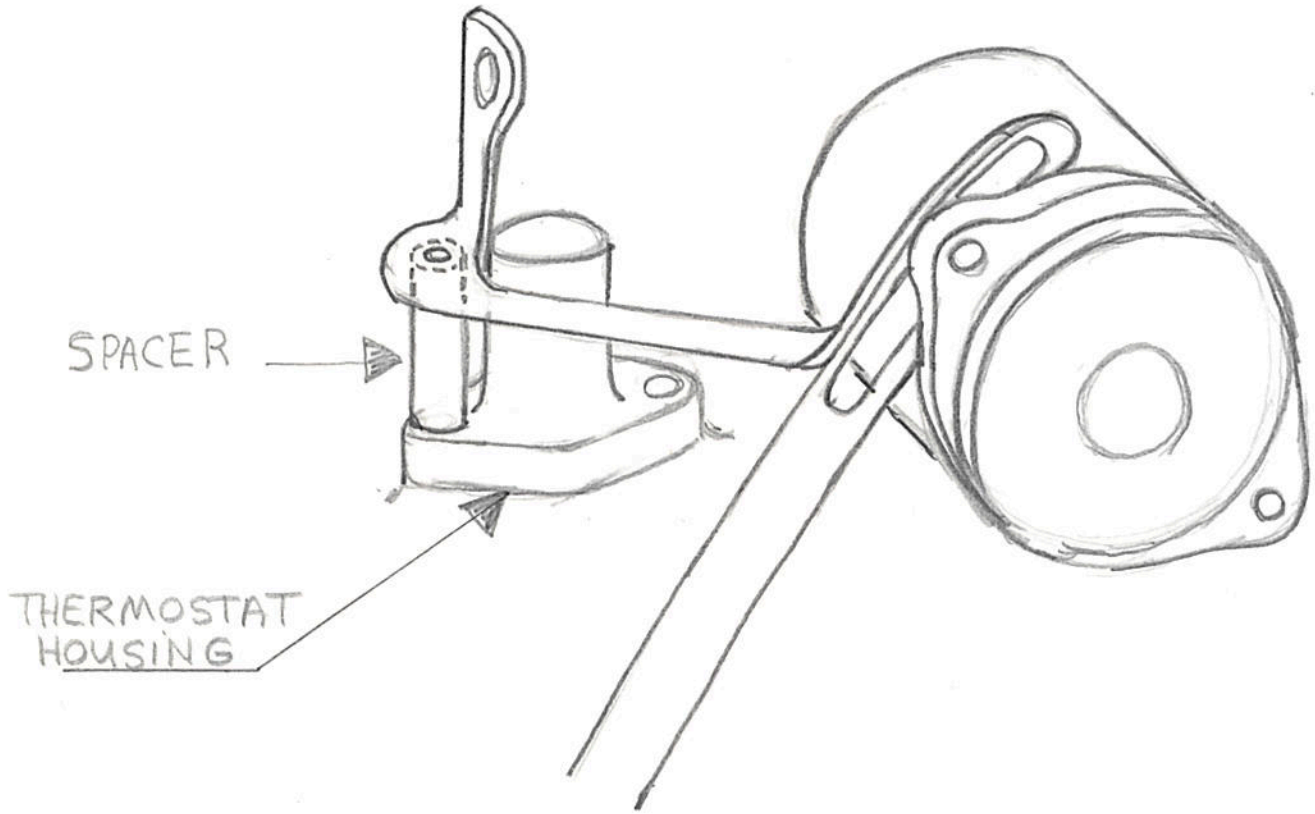
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Special Installation Instructions

Orca Kit Number: 300006

Type of System: Horizontal Mount / Half System

Special Instructions for 1995 Model year:

All directions ***below*** are given as viewed from the front of the engine.

1. Disconnect the two wires on the reset button near the fuel pump.
2. Remove the two screws holding the relay assembly.
3. Remove the bolt from the right side hole of the fuel / filter pump assembly. (A in drawing) Loosen the bolt on the left side just enough to push the relay assembly unit and reset wires down through the opening between the bolt holes and behind the filter. (B in drawing) The bolt only has to be loosened a small amount to allow the unit to pass. Be careful not to damage the fuel line.
4. Bring the wiring harness, reset button wires and the relay assembly up and on top of the fuel filter bracket as shown in the drawing.
5. Return the relay assembly and the reset wire to their original position.
6. Install the Ka 103 style bracket onto the right side (as viewed from the front of the engine) hole of the fuel pump / filter bracket with the $\frac{3}{8}$ " x $1\frac{3}{4}$ " bolt provided.