

# 356 ENGINE VENTILATION SYSTEM INSTALLATION

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## OVERVIEW

The engine breather in the 356 will be modified so the air it uses for combustion comes from the aft compartment. This will be done so if the fire extinguisher system is activated the fumes from the extinguisher will not be sucked into the engine. This project is broken down into the following steps that will be discussed in further detail.

1. Cut 3-1/4" holes in the aft stateroom aft bulkhead and the aft state room bunk aft partition
2. Modify air breather on the engine to accept the air breather adapter. One end of the flexible duct will be attached to the air breather.
3. Run 3" flexible duct from the aft compartment to the engine compartment.

### ITEMS SHIPPED IN THE ENGINE BOX VENTILATION SYSTEM KIT

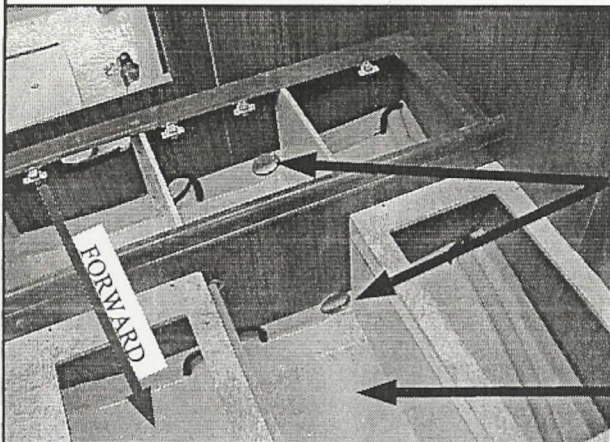
1. ONE 3" AIR BREATHER ADAPTER
2. 13 FEET OF 3" FLEXIBLE DUCT
3. TEN #10 X 3/4" SS PANHEAD SCREWS
4. FIVE # 6 X 1/2" SS PANHEAD SCREWS
5. ONE #52 (4") HOSE CLAMPS
6. TEN 15" TIE WRAPS WITH EYES
7. TWO INFORMATIONAL LABELS

### TOOLS REQUIRED

1. DRILL
2. 3-1/4" HOLE SAW
3. SCREW GUN WITH P2 (NOT NECESSARY, CAN USE A PHILLIPS HEAD SCREWDRIVER)
4. CAULK GUN
5. VACUUM CLEANER (TO CLEAN UP SAWDUST)
6. 5200 MARINE SEALANT
7. JIGSAW OR GRINDER TO CUT LIP OFF AIR BREATHER
8. METAL FILE TO DE-BURR AIR BREATHER

### HOLE CUTOUTS IN THE AFT STATEROOM AFT BULKHEAD AND AFT BUNK AFT PARTITION TO RUN THE 3" FLEXIBLE DUCT

1. Remove the bedding on the aft stateroom bunk and lift out the port center drop-ins (just aft of the engine box) to expose the shaft log/muffler compartment.
2. Remove the aft access door to the engine compartment by unlatching it.
3. Remove the aft compartment access panel located in the center of the aft bulkhead, undo the bolt latches, lift the panel up, then pull the bottom forward and lower the panel.
4. Lift the two port hinged shelves on the aft bunk storage compartment to gain access to the bottom of the aft stateroom aft bulkhead and prop them open.
5. Using a 3-1/4" hole saw drill a hole thru the aft stateroom aft bunk partition in the lower port corner of the shaft log/muffler compartment so you leave approximately 1/2" of partition under and to the side of the hole. (see picture below)
6. Drill the same size hole with the same spacing thru the aft stateroom aft bulkhead directly aft of the other hole. (see picture below)
7. Clean and vacuum the sawdust up.



TWO 3-1/4" HOLES, ONE IN THE BOTTOM-PORT CORNER OF THE AFT STATEROOM AFT BUNK PARTITION FROM INSIDE THE SHAFT LOG/MUFFLER COMPARTMENT, THE OTHER IN THE AFT BULKHEAD DIRECTLY BEHIND IT.

SHAFT LOG/  
MUFFLER  
COMPARTMENT

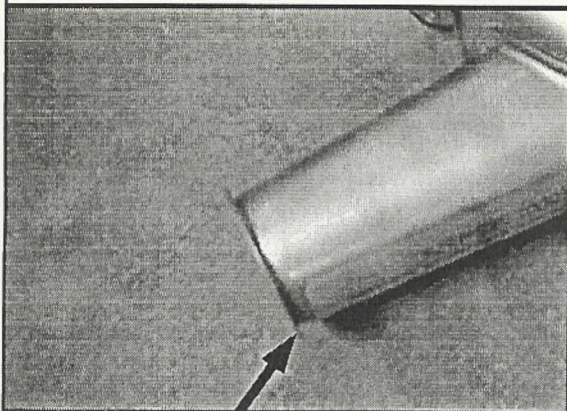


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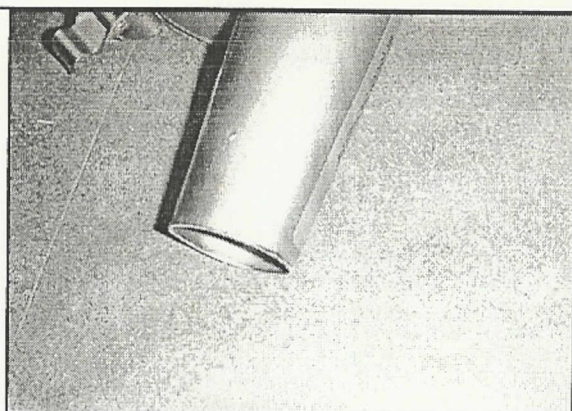
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## MODIFYING THE ENGINE AIR BREATHER TO ACCEPT THEN 3" FLEXIBLE HOSE

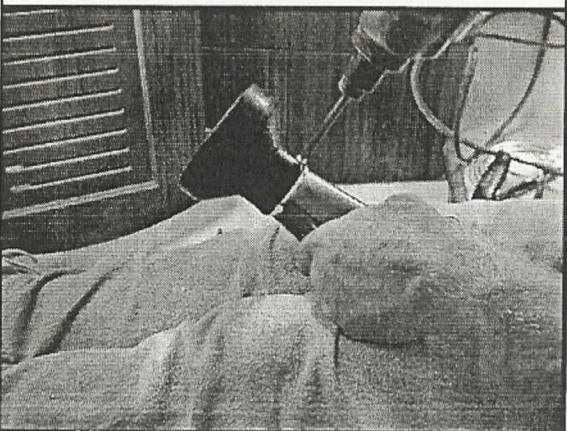
1. The air breather on the engine will need to be removed to modify it by undoing the two retaining clips.
2. The lip on the end of the cone will need to be cut off so the adapter provided in the kit will fit over the cone. Sand or file the end smooth after cutting off the lip.
3. Slip the adapter over the end of the air breather the drill three evenly spaced 1/8" holes around the base of the adapter and thru the metal cone. Before removing the adapter make a small mark on the adapter and air breather so you can easily line the holes back up.
4. Apply a 1/4" bead of 5200 marine sealant around the end of the air breather then slide the adapter back on and line up the drilled holes.
5. Secure the adapter to the breather using three #6 x 1/2" SS panhead screws.
6. Apply 5200 marine sealant around the inside of the adapter to ensure a good seal.
7. Wipe off excess sealant.
8. It will be easier to attach the flexible hose (which hasn't been run yet) to the adapter before reinstalling the breather onto the engine.



LIP ON END OF AIR BREATHER THAT WILL  
NEED TO BE CUT OFF

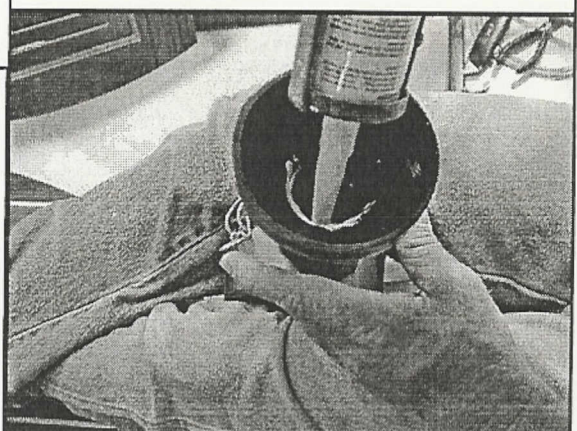


AFTER LIP HAS BEEN CUT OFF AND SANDED  
OR FILED SMOOTH



SECURING ADAPTER TO BREATHER WITH  
THREE #6 X 1/2" PANHEAD SCREWS. NOTICE  
SEALANT AT BASE OF ADAPTER

NOTE:  
THESE PICTURES  
SHOW A 4"  
ADAPTER.  
THE 356 MODEL  
WILL HAVE A 3"  
ADAPTER  
INSTALLED BUT  
IT IS INSTALLED  
IN THE SAME  
MANNER



APPLY SEALANT TO INSIDE OF ADAPTER TO  
ENSURE A GOOD SEAL.

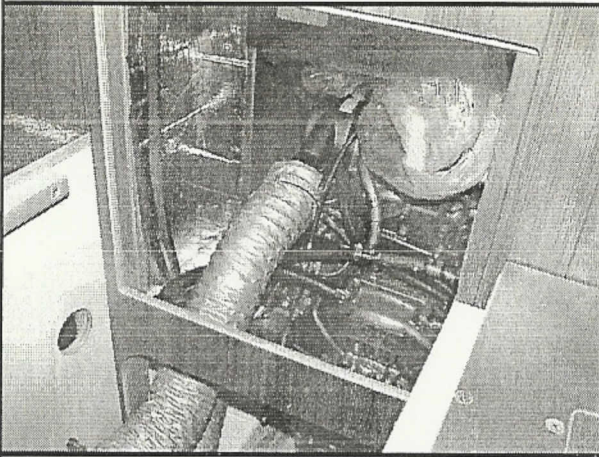


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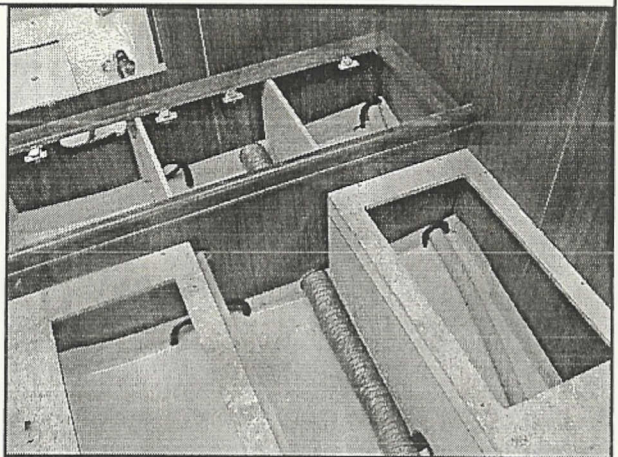
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## RUNNING THE 3" FLEXIBLE DUCT FROM THE ENGINE TO THE AFT OF THE BOAT

1. Place the provided duct in the shaft log/muffler compartment that is located in the aft stateroom.
2. The forward end of the duct will be attached to the air breather adapter on the engine using a #52 (4") hose clamp. Reattach the breather to the engine. Run the duct along the bottom of the port side of the shaft log/muffler compartment and thru the two previously drilled 3-1/4" holes. Secure the duct to the bunk every 14" with the provided tie wraps.
3. The aft end of this duct will run into the aft compartment then up and looped back down. The reason to loop the duct is so the opening faces down to reduce the chance of water getting in the duct. Access to this compartment can be gained thru the port swim seat. If there is more than a foot of duct hanging down cut off the excess and discard. Also if the tie wrap is attached to the bulkhead make sure the screw does not go all the way thru the bulkhead.



INTAKE HOSE ATTACH TO THE BREATHER  
ADAPTER

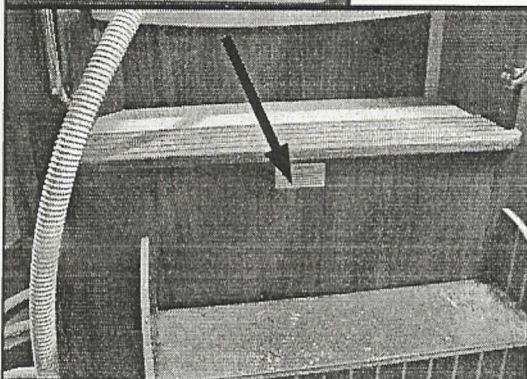


INTAKE DUCT RUNNING FROM AFT  
COMPARTMENT TO ENGINE

## APPLYING LABELS TO BOAT

1. Two labels are provided in the kit, a yellow caution label and a red informational label.
2. The yellow label will need to be placed in a prominent location on the steps of the engine box. The picture shows a typical location for this. The boat model may be different so the steps may look different.
3. The red label will need to go in a prominent location on the steering console. Again, the picture shows a typical location and the console may look different.

**CAUTION**  
Engine compartment is protected by a fire extinguishing system. Avoid inhalation of toxic fumes. If fire extinguishing system discharge occurs, ventilate space before entering.



IF FIRE EXTINGUISHER SYSTEM  
DISCHARGES, IMMEDIATELY SHUT  
DOWN ENGINES, GENERATORS  
AND BLOWERS.

