Gano Coolant Filter Co.

The Gano Coolant Filter is a patented device that not only can prevent costly coolant system damage; it can also be used as a diagnostic tool in the analyzing overall coolant system operation. **The Gano Filter can provide a window into your coolant system.** This filter is an accessory to the cooling system to be checked, cleaned (if needed) and placed back into the system. It should provide many years of service.

The Gano Filter is a full flow device that is designed to be installed in the upper radiator hose of your automobile. Once install it prevent rust scale, gasket material and other foreign particles from plugging radiator tubes; thus avoiding radiator repair or replacement.

Cleaning the filter consists of removing the filter and back-flushing with soap and water. A small brush like a small acid brush works well. The trapped particles may also be removed by using compressed air. The new medium filter is made of stainless steel and is one unit, **it can not be disassembled**. The small and large filter units can be taken apart, but is not recommended or needed for cleaning.

Filter Housing & Filter Size

The filter is available in three housing types and 3 sizes.

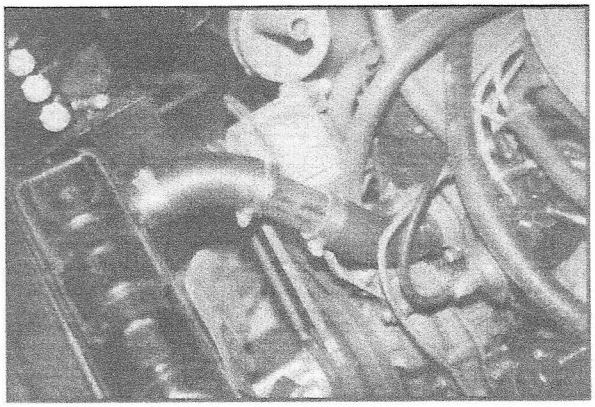
1. The clear is a Hi-temperature, high pressure polymer and extremely durable. Because of how the material is extruded it may appear to have minor cosmetic flaws, it is the nature of this material. It is not plexi-glass (a trademark product).
2. Brass Housing comes in all three sizes.
3. Aluminum Housing comes in medium size only at this time.
4. SIZES: **Small**, Hose size 1 1/8" to 1 3/8" I.D. **Medium**, Hose size 1 ½" to 1 ¾" I.D. **Large**, 1 7/8" to 1 ¾" I.D.

The **Clear/Polymer Models** requires a small section of the top radiator hose to be removed. When this section is replaced by the filter you now have a window into the cooling system. With the engine running, turbulence in coolant flow maybe noted. This can be used as an indicator of coolant velocity and be used to determine the proper operation the of thermostat and water pump. Bubbles in the coolant and overheating can indicate a leaking head gasket forcing super heated gases into the cooling system. Another more common cause is water pump cavitations. With the engine stopped an empty filter would indicate a low coolant level. This feature is especially useful when the engine is hot or over-heated, removal of the radiator cap could be dangerous.

The **Brass/Aluminum Models** are especially suitable for vehicles with high performance engines and those vehicles used for racing. It performs the same functions as the polymer model but does not allow for observation. The particles trapped will not be visible. Performance engine tends to be disassembled and inspected on a regular basis. Checking the coolant filter should become another item on the maintenance checklist. For show cars the filter may be slipped entirely inside the hose, use of a drop of liquid detergent on the housing to help slip inside the hose.

The **Aluminum Model** comes in Medium size only. It is a Satin finish that can be polished to Chrome like finish. The Aluminum Filter is only one third the weight of the brass housing.

These particles were trapped by the Gano Filter and removed from the cooling system of a 1966 Mustang over a period of one year.



The Gano Filter (plastic model) installed in a 1966 Ford Mustang

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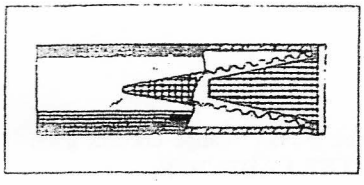

INSTALLATION INSTRUCTIONS FOR FILTER WITH PLASTIC TUBE

PLEASE READ ALL INSTRUCTIONS BEFORE BEGINNING THE INSTALLATION. IF YOU HAVE QUESTIONS OR PROBLEMS WITH THE INSTALLATION, PLEASE CONTACT US FOR FURTHER INFORMATION.

The finest materials available have been used to manufacture this filter. With proper care it will last for many years. We do not claim that it is indestructible or that it will overhaul the cooling system of your vehicle. Its purpose is to prevent foreign particles from clogging the radiator. As part of the installation, it is necessary that defective hoses be replaced so a good seal can be achieved without over tightening the clamps. It is also necessary that a defective cooling system be repaired before the filter is installed.

IMPORTANT: With the installation described below, the Gano Filter will remove circulating particles efficiently, but WILL NOT remove particles that have already lodged in the tubes of the radiator. If the cooling system has been overheating, we recommend that the radiator be cleaned BEFORE installing the filter according to these directions.

CAUTION: DO NOT USE ANY LEAK INHIBITOR OR CAUSTIC FLUSH PRODUCT WHILE THE FILTER IS INSTALLED IN THE SYSTEM. CONTACT WITH ANY SUCH PRODUCT MAY DAMAGE OR CLOG THE FILTER. DO NOT CLEAN TUBE WITH ANY SOLVENT – USE ONLY SOAP AND WATER.

TO INSTALL THE FILTER:

1. Drain the radiator.
2. Disconnect the hose which extends from the engine to the top inlet of the radiator.
3. Determine whether each end of the filter can be inserted into the hose for at least 3/4 inch.
4. Cut and remove a section 1½" long from a straight portion of the hose, preferably near the radiator (this will become the window into the cooling system).
5. Insert the filter in the resulting gap with the tip of the screen pointing toward the end of the hose which connects to the radiator. The ends of the filter should be inserted 3/4 inch into the cut end of each section of the hose and should be secured using stainless steel worm-drive hose clamps. **Clamps should be tightened to a snug fit but not over tightened.**

CAUTION: CLAMPS SHOULD BE TIGHTENED TO A SNUG FIT USING ONLY A SCREWDRIVER. DO NOT USE ANY TYPE OF WRENCH. ALTHOUGH THE PLASTIC TUBING WILL TAKE MUCH ABUSE, USING A WRENCH WITH THE WORM-DRIVE CLAMP ALLOWS ONE TO APPLY PRESSURE IN THOUSANDS OF POUNDS WITH THE POSSIBILITY OF CRUSHING THE FILTER. HAND-TIGHTEN WITH A SCREWDRIVER SHOULD BE ONLY ENOUGH TO PREVENT LEAKS.

6. With the enclosed lashing wire, bind the two hose clamps together by wrapping the wire around the worm-drive portions of the clamps as shown in enclosed photo. This will prevent the hoses from separating resulting in loss of coolant.

7. Refill the cooling system with coolant and distilled water in the recommended proportions. (The use of distilled water will prevent calcium build-up both in the radiator and on the filter screens.) Check entire installation carefully for leaks. **RECHECK TIGHTNESS OF HOSE CLAMPS AFTER A FEW WEEKS OF USE.**

8. During the first few weeks of operation, check the filter screens regularly and often. If a large number of particles has been trapped, the screens must be cleaned.

TO CLEAN THE FILTER:

1. Drain radiator until coolant is below the level of the filter.
2. Remove filter from radiator hose.
3. Shake upturned unit until most particles have fallen through aperture.
4. Use a small brush or tweezers to loosen any remaining particles.
5. Back flush with water to complete cleaning.
4. Return filter to the hose and tighten hose clamps.
5. Refill radiator.

It is very important to check the filter regularly in order to be sure that the filter does not clog. A CLOGGED FILTER COULD SLOW THE FLOW OF THE COOLING LIQUID AND INTERFERE WITH ENGINE COOLING. SOME ENGINES RELEASE SCALE CONTINUOUSLY AND HOSES MAY SHED SMALL PIECES OF RUBBER. Your own observations and experience will determine the frequency with which the filter must be checked. Each vehicle is different.

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1. It is also important to completely change coolant annually. **SOME COOLANTS,IF NOT CHANGED YEARLY MAY BECOME ACIDIC AND DAMAGE THE RADIATOR.**

2. If the cooling liquid is too concentrated, the screen will not be visible through the transparent tube. In this case check for trapped particles after draining a quart or so of the liquid from the radiator to expose the screen. **AFTER CHECKING, BE SURE TO REFILL THE RADIATOR.**

4. In addition to maintaining coolant free of particles, this filter offers the opportunity for a visual check of the operation of the water pump and thermostat. When the engine has warmed to its normal operating temperature, the thermostat should open and liquid flow should show as turbulence in the liquid.

NOTE: LIQUID FLOW WILL NOT BEGIN UNTIL THE ENGINE HAS THOROUGHLY WARMED. Liquid flowing with a cold engine indicates a defective thermostat. The degree of turbulence indicates the amount of liquid flow which in turn depends upon engine speed, efficiency of the pump and the degree to which the thermostat has opened. If flow does not increase as engine speed increases, the pump belt may be loose, the thermostat may be stuck, or there may be a blockage elsewhere in the cooling system.

USING A FLEX HOSE TO INSTALL THE COOLANT FILTER

In the case of a few vehicles, the original hose may not expand enough to fit the filter. In these cases, it will be necessary to replace the original hose with another hose that is the same shape but which has an inside diameter large enough to fit the filter. If a hose cannot be found that is the same shape as the original, two flex hoses may be used instead.

IF THE ORIGINAL HOSE IS A FLEX HOSE it should be replaced with two flex hoses, the combined length of which is equal to the length of the original hose minus 1 1/2". (This 1 1/2" space will be the window portion of the filter.) Continue with Step 5 above.

NOTE: Most hoses will expand or compress as much as 1/8". In the case of vehicles which require a 1" (inside diameter) hose, it has been determined that a 1 1/4" hose will compress sufficiently to provide a good seal. In some cases the hose may seem too loose, but proper tightening of the worm drive clamps will make a good fit.

CAUTION: It is extremely important that the hose clamps be tightened cautiously. The tubing we use is very strong, but is not indestructible and can be crushed by over tightening of the hose clamps. If the tube has been inadvertently crushed a replacement can be purchased and the screens can be transferred to the new tube.

NOTICE TO PURCHASER: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use or inability to use the product. Before using, the user must determine the suitability of the product for its intended use, and the user assumes all risk in connection therewith. However, if the purchaser finds the filter not suitable for his vehicle, and it is still in new condition, it may be returned within 30 days for a full refund.

LIMITED WARRANTY: Every Gano Filter is thoroughly inspected before shipment and is warranted to be free of defects from workmanship and materials for a period of ONE YEAR from the date of purchase. The filter must be returned to the dealer or manufacturer. Damage to the filter resulting either directly or indirectly from abuse, misuse or improper maintenance is not covered by this warranty.

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