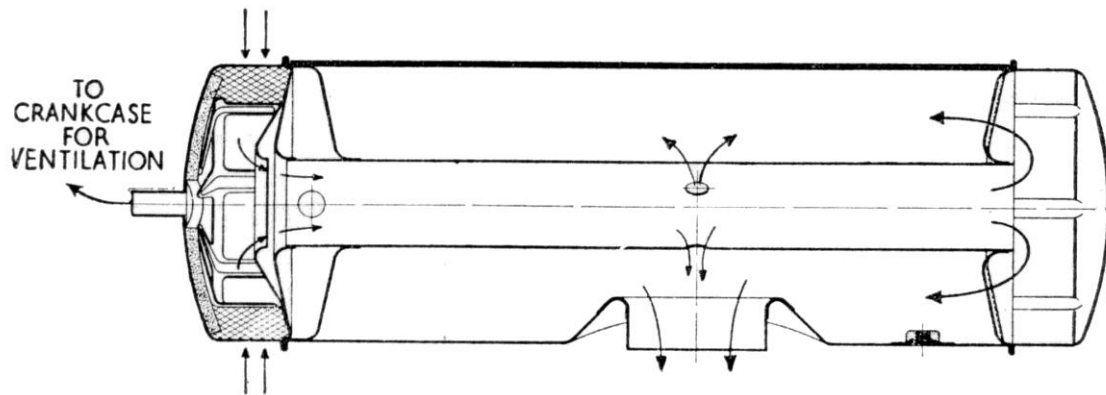


Suggestions for improvement of the Triumph Roadster 2000 air-filter

by Paul Alting van Geusau

The AC air filter and its drawbacks



The Triumph Roadster 2000 air filter of AC manufacture is essentially in the form of a long cylindrical housing incorporating a silencer and air filter of which the silencer takes most of the volume. The filter is formed by a relatively small wire mesh package at the forward end of the tube, which is effective enough to prevent stones from entering the engine but has mediocre air filtering capacity. Another drawback of the original AC filter is that it cannot be taken apart for cleaning.

Improvements envisaged

Since effective filtering of intake air is an important factor when life of an engine is concerned I decided to modify the original filter to incorporate a modern exchangeable filter element. The filter should be made dismountable, but at the same time, the modifications should not detract from originality. The conversion proved less difficult than was expected and, I am confident, can be carried out by most Triumph Roadster owners themselves.

Description of the modifications

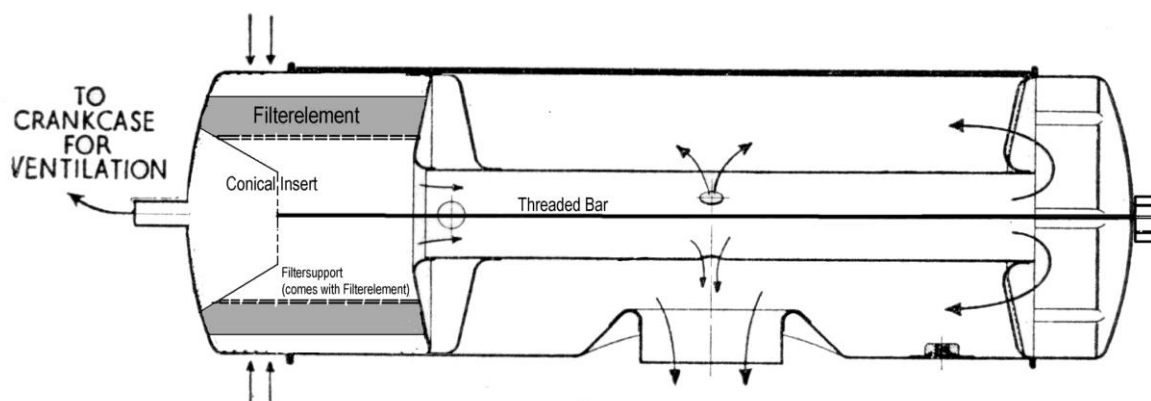
At both ends of the sheet metal tubular housing the edges of the end caps are folded over the metal of the tube ends. With the aid of a screwdriver and pliers the edges of the caps are folded back (not easy but take your time and do not damage the edges!) and the caps taken off the tube. After redressing of the cap-edges to become cylindrical again the caps fit perfectly over the tube ends and become removable end-closures of the housing tube.

When taking off the caps you will notice the dishes of the air silencer that are clamped between the folded edges of the caps and housing (see picture).

The silencer comprises a front dish and silencer tube connected to it, as well as a rear end dish in which the silencer tube is slidably supported (see pictures). In order to provide space for the filter element the front dish together with the silencer tube should be moved backwards into the housing tube. Thus the outer edge of the dish fixed to the tube should be cut off to reduce the dish diameter for a sliding fit in the tubular housing. The same distance as the dish is moved backward into the housing (which distance depends on the length of the filter element you select) should be cut

off the silencer tube end (the end of the cylinder tube that is supported by the rear dish).

This drawing shows the principle of the conversion.



Of course shortening of the silencer tube changes the silencing characteristics of the air filter, but probably because of the better silencing qualities of the filter element the difference in silencing is not noticeable.

The wire mesh filter element in the front cap is discarded and the air-entry openings in the cap are provided with a (preferably stainless steel) screen, made most easily by cutting a strip from a stiff mesh screen and rolling it to a ring that fits into the cap.

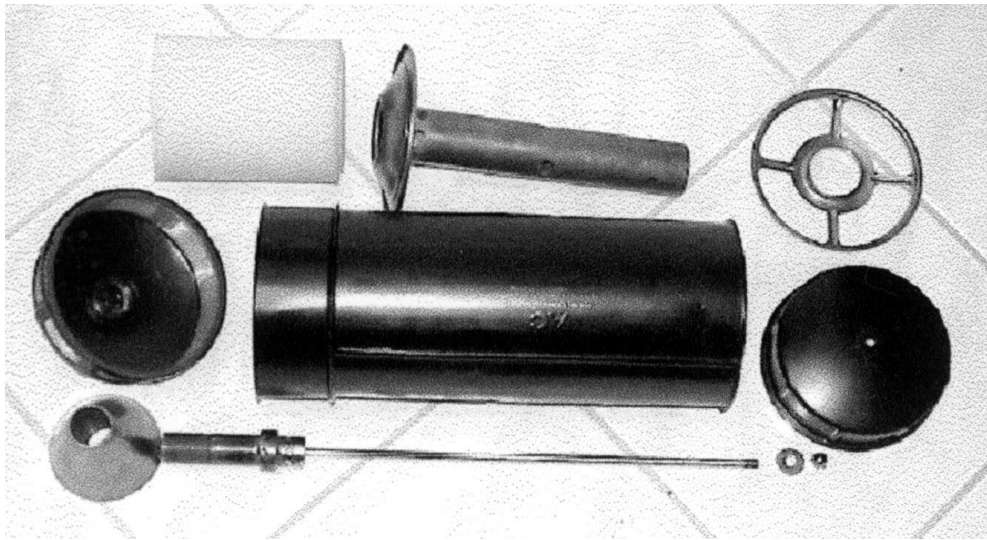
When selecting the air filter element I opted for a tube shaped foam filter element because foam elements can be cleaned and thus used for very long periods. However, also tube shaped paper elements of the appropriate size (diameter and length) can be used instead.

A foam element intended for the Peugeot 205 GTI (Purolator Nr A17891) was acquired and it was shortened in length to fit with some axial preload in the space provided for it between the end cap and silencer dish. The external diameter of this foam element is also well adapted to the internal diameter of the tubular housing, so as to provide a large surface for entry of air.

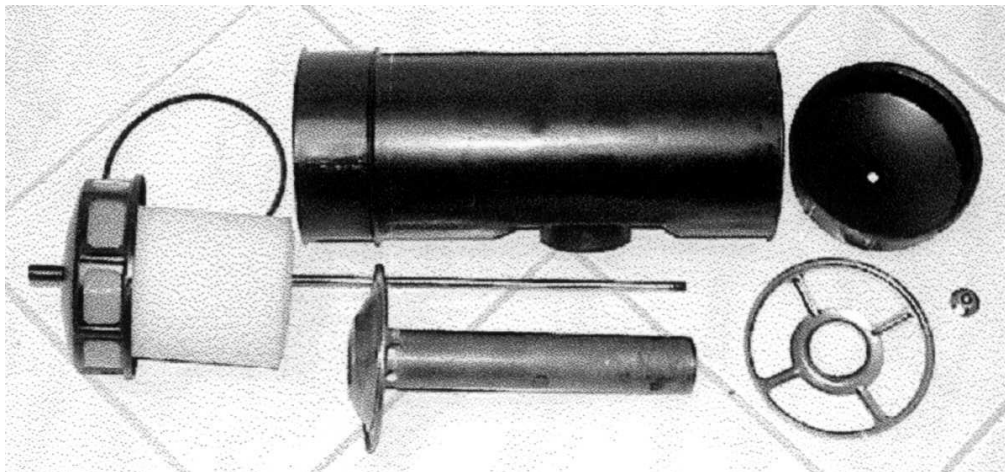
The silencer dish has a conical protrusion providing support for the tube shaped filter element so that the filter element is centred in the housing. In order to keep the foam element also centred at the cap end, the cap was provided with a sheet metal taper (see picture). However, a simple U-shaped metal strip fixed to the cap end can also be used as a support for the inside of the foam filter element. The front end cap has a centrally positioned connection for air supply to the engine (the vanguard engine already incorporated an anti-pollution system before 1950!) which opening must be left free.

With a long 8mm bar, fixed to the conical protrusion of the front cap (or U-shaped metal strip), running through the length of the housing and a hole in the end cap, the bar being provided with screw thread at its end to take a nut, the air filter can be assembled and tightened up.

For the rest, I consider that the pictures below say more than words can do....



Parts ready for assembly



Preassembly



Finished!

If members have questions please contact me under pravg@t-online.de)