VOKES AIR CLEANERS

SERIES B & C - PR226 & PR226/1

Vokes air cleaners were first listed in the 1952 Spares List Supplement, but were available for sometime before then and, of course, will fit Series B as well as Series C machines. Retailing at £1.9s.9d. in 1952, they were not cheap; the same money would buy over 10 gallons of petrol or 20 pints of "mild". But, unlike the cheaper Amal "cleaners" described earlier, they did ensure a clean air supply to the carburettor. The Vokes model fitted to the "open" Series D machines was a different type altogether.

The filter consists of a ring of fabric material 1.13/16 in. wide backed and stiffened by a steel gauze, folded into 20 pleats, 1 in. deep, giving a total filter area of approximately 72 square inches. The element is a snug fit in a stiff shroud 3.31/32 in. dia. x 1.13/16 wide, made of perforated steel sheet 0.025 in. thick (23 s.w.g.). Felt discs 4 in. o.d. x 2 in. i.d. on either side of the shroud/filter assembly prevent the ingress of unfiltered air. The base plate, pressed from steel sheet, has an internally threaded ring 1.1/4 in. x 24 t.p.i. welded in the centre to accept the light alloy adaptor. A stirrup riveted across the ring carries a welded 1/4 in. B.S.W. nut to take the screw holding the cover plate. This is made of the same material as the base plate, and indeed was probably pressed with the same die, but has a wider edge. The 180 deg. lip is stepped 1/4 in. from the plate in order to clear the perforated shroud. Its function is simply to prevent rain, etc. from reaching the filter when the machine is stationary. As can be seen on the drawing, the whole assembly is held together by the central 1/4 in. B.S.W. screw and plain washer which might be expected to loosen. Fortunately this does not happen in practice, as the slight springiness of the cover plate combines with the damping of the felts to counteract any vibrations and maintain tightness.

Although bearing different part numbers, the cleaners for 1.1/16 and 1.1/8 in. carburettors are identical. The part numbers therefore only differentiate the adaptors. Both sizes are cast light alloy, left as cast after fettling. The larger adaptor is threaded 1.7/16 in. at the carb. end, and 1.1/4 in. at the cleaner end, whilst the smaller is threaded 1.1/4 in. at both ends; in each case, the thread is 24 t.p.i..

Whatever its size, the adaptor is angled 135 degrees. This allows the adaptor/cleaner assembly to be screwed on at the required angle to suit the front or rear carburettor, the adaptor being then locked in situ by tightening the long 2 BA bolt. This scheme is the only serious flaw in the design; the thread at the slotted end often proves to be a loose fit on the carburettor, perhaps because the adaptor thread was oversize, or the carb. thread worn by a bell-mouth intake loose over a long period. Whatever the reason, the 2 BA bolt was frequently overtightened and a crack often appeared at the root of the slot; further tightening only lengthens the crack and makes matters worse. The fault seems more frequent on the larger and more fragile 1.1/8 in. adaptor. Unfortunately there is no obvious remedy; the thread makes welding impractical and the angled component is very awkward to machine from a solid lump, or indeed to cast. One solution is to machine two threaded brass rings and braze those at an angle (which, conveniently, can largely exceed 135 degrees) on a piece of straight tube. Stainless steel can be used; it is only slightly harder to machine than brass and easily silver-soldered with the correct flux. The slot would of course be omitted.
and the adaptor locked at a suitable angle with a little Loctite 222. Note that on
the Comet an angled adaptor is not needed; there is enough room to fit a
completely straight adaptor, fairly easily machined from a light alloy rod as shown
in the drawing, which can be screwed fully home and needs no locking device.

The base plate, cover and perforated shroud were all finished in a dark grey
enamel with a "hammer finish" effect which does not blend very happily with the
rest of the machine, and some will regret the inevitable removal of the standard
chromium-plated air intake. There is no reason, of course, why the original finish -
probably very tatty by now - should not be replaced by black enamel, or even
satin chrome, if "originality" is not the aim.

The transfer adorning the cover on the photograph was perhaps more often placed
above the central screw. It was 2.1/16 x 1 in., with a bright yellow background;
the lettering and the border were dark blue, whilst the "star" pattern within a
circle superimposed on the whole design was pale red, now usually faded into light
orange or brown. This polychrome combination is not as garish as one might think,
thanks to the small size of the transfer. Additionally, the cover usually bears the
cryptic numbers shown in the drawing. There are minor variations of these;
e.g.1SS2. Perhaps someone, an ex-employee at Vokes, a Guildford firm, could
explain the significance of these figures.

Whatever one's views on the appearance of the air cleaners, there can be no
doubt concerning their functional value. The amount of grit - sand like but finer -
collected within a relatively short mileage, even when tarmacked roads only are used,
is quite staggering. On untarmacked, dusty roads or tracks, which still exist in Europe
(Spain, Greece, Scandinavia and even France), air cleaners should be regarded as
essential. The advent of close tolerance pistons makes them only more so.

Assuming a cleaner with a filter in reasonable condition has been obtained,
maintenance consists of cleaning the filter and felts at least every 2000 miles -
more often on dusty roads. Petrol will certainly do, but some riders prefer to use a
water soluble degreaser (with water flow from the inside to wash grit out). After
drying, re-oil the filter and felts with thin machine oil or K&N filter oil.
Refer to Know Thy Beast Chapter 17 for comments on the minor alterations to
carburettor settings which may be necessary.

**SERIES D - PR376 & PR376/1**

On Series D models, Amal Monoblocs took the place of the earlier type of
carburettor fitted to Series B & C machines. No doubt, the Vokes air cleaners
designed for the earlier carburettors (described in MPH 532) could easily have
been altered to suit the new instruments, but the makers preferred to bring out a
simpler, completely new, design. Unfortunately, in their commendable endeavour
to simplify with the adoption of a curious, oblong design, Vokes failed to provide
some kind of shield to prevent water from reaching the perforated shroud and
soaking the filter when the machine is standing in the rain. However, this can be
avoided (on open models at any rate) by turning the filter 90 degrees so that the
face bearing the transfer lies horizontally. Unlike the fragile cast alloy part fitted to
the Series B & C cleaners, the robust steel adaptor provides an adequate air flow
thanks to its larger diameter.
The filter itself consists of a strip of fabric material approx. 3.1/2 in. wide, backed
and stiffened by a steel gauze and supported by a steel frame within the box housing, The strip is folded into 12 pleats about 1/2 in. deep, giving a total filter area of approximately 45 square inches. Regrettably, this is considerably less than that provided in the Series B & C cleaners (72 sq. in.), nowadays generally considered barely adequate. The internal pressed steel supporting frame is held by twelve light alloy rivets to the 0.040 in. thick outer box steel pressing, so that the gauze lies just under the perforated shroud; the remaining space provides a still-air volume as on the Series B & C version. Eight of the rivets are shown on the drawing, the other four, lying on the right flank of the cleaner, are not visible as drawn. Examination of the complete cleaner shows that it was probably made by folding and riveting the main assembly, the gauze and perforated shroud were then slipped in, and the whole retained by making a final fold at the top end. Consequently, and unlike the Series B & C cleaner, the assembly cannot be dismantled to withdraw and clean the filter. This is a major design flaw and shows a deplorable lack of foresight on the part of the makers.

The cleaners for the 1.1/8 and 1.1/16 in. carburettors bear different part numbers and (unlike the Series B & C pattern) are not interchangeable as the diameter of the mounting sleeve differs according to the carburettor size (see drawing). Naturally the adaptors are also different. Both sizes are machined from steel tube and are cadmium plated. As on Series B & C carburettors, the adaptor takes the place of the air intake bellmouth. The six notches were no doubt intended for a C spanner, but hand tightening is normally satisfactory. The larger adaptor is threaded 1.3/4 in. and the smaller 1.5/8 in., both 24 t.p.i. The adaptor is usually a close push fit in the cleaner’s slotted sleeve, and is secured in situ by a clip (often missing from surviving cleaners, but believed to be as drawn) and a 2 B.A. bolt and nut. This clip can be replaced with advantage by a suitably sized stainless steel ÒJubileeÓ clip. Some Monoblocs manufactured after 1955, and therefore not original Vincent equipment, have no thread provided for an air intake bellmouth and consequently cannot be fitted with a Vokes air cleaner. The housing and its perforated shroud were, it seems, originally finished in black enamel. This can only be renovated by hand-painting or spraying, taking care the paint does not reach the gauze or clog the perforations of the shroud. Any other process, e.g. stove-enamelling or electroplating, would damage the fabric of the filter which cannot be removed from its housing. There was a Vokes transfer (its position is shown in the drawing), identical to that adorning the Series B & C filter housing (see photograph) but for the omission of the ÒstarÓ pattern superimposed on the main design.

According to the Series D Spares List, Vokes air cleaners were only fitted to the open models, and Paul Richardson does remark in Vincent Motorcycles that air cleaners are difficult to install [on Series D] especially on the fully enclosed models’, but this is a somewhat misleading statement as, in fact, their installation on the open models does not present any difficulty. On the enclosed machines, however, it is impossible to fit the Vokes cleaner to the front carburettor because there is not enough room behind the side panel. This is a pity as air cleaners on the enclosed models are desirable, particularly at the rear, where any grit or dust swirling under the cowl is bound to reach the rear carburettor. Of course, one could fit the Vokes cleaner to the rear carb. only but this would be a very lame solution. Fortunately, K&N cleaners can be fitted to both rear and front instruments. Refer to Know Thy Beast, Chapter 17, for installation details.
As mentioned before - but it is worth repeating - there can be no doubt concerning the desirability of fitting air cleaners. The amount of grit - sand like but finer - collected within a relatively short mileage, even when tarred roads only are used, is quite staggering. On untarred, dusty roads or tracks, which still exist in Europe (Spain, Greece, Scandinavia and even France), air cleaners should be regarded as essential. The advent of close tolerance pistons makes them only more so.

Assuming a cleaner with a filter in reasonable condition has been obtained, maintenance consists of cleaning the filter at least every 2000 miles - more often on dusty roads. Since it is impossible to extract the filter, cleaning can only be carried out by swilling the complete cleaner in a petrol bath, or possibly by using a water soluble degreaser and feeding the solution through the stub opening to wash the grit out. After drying, re-oil with thin machine oil or K & N oil.

Finally, it seems likely that due to the small filter area, some alterations to the standard carburettor settings may be necessary to obtain smooth running.
VOKES AIR CLEANERS - PR 226 & PR 226/1

FOR USE WITH SERIES B & C MACHINES
PR 226 FOR 1.1/16 IN. CARBURETTORS
PR 226/1 FOR 1.1/8 IN. CARBURETTORS

ITEMS (ALL CADMIUM-PLATED):
1 off 2 BA x 1.1/2 in. LONG HEX. HEAD BOLT
1 off 2 BA FULL NUT
1 off 2 BA SPRING WASHER
1 off 1/4 BSW x 1.1/8 in. LONG ROUND HEAD SCREW
1 off 1/4 BSW PLAIN WASHER

STRAIGHT ADAPTOR FOR VOKES AIR CLEANER ON COMET
MATERIAL: LIGHT ALLOY ROD 1.5/8 DIA.
FINISH: AS TURNED

PART SECTION

1.11/16
1/4
4.3/4 deg.
5/16

1.7/16 x 24 t.p.i.
1.1/4 x 24 t.p.i.
1.1/16 DIA.
1.7/16 x 24 t.p.i.

CHAMFER
45 deg. x 1/16

CHAMFER
45 deg. x 3/64

RELIEVE TO ROOT DIA. 1/16 WIDE

9.1/2 deg.
VOKES AIR CLEANERS - PR 376 & PR 376/1
FOR USE WITH OPEN SERIES D MACHINES
PR 376 FOR 1.1/16 IN. CARBURETTORS
PR 376/1 FOR 1.1/8 IN. CARBURETTORS

ADAPTOR  CLIP  AIR CLEANER

REAR VIEW OF AIR CLEANER
SHOWING CLAMP SLEEVE LOCATION,
RIVET HEADS & VOKES PART NUMBER
(N.B. C54335 FOR PR 376/1)

NOTES:
1. THE CLIP IS MOUNTED ON THE CLEANER'S CLAMP SLEEVE
2. THE CLAMP SLEEVE HAS 4 EQU-SPACED SLOTS, EACH 1/16 WIDE x 3/8 DEEP
3. THE AIR CLEANER WAS FINISHED IN BLACK ENAMEL

ITEMS (ALL CADMIUM-PLATED):
1 off 2 BA x 1 in. LONG HEX. HEAD BOLT
1 off 2 BA FULL NUT
1 off 2 BA SPRING WASHER

PR 376 ADAPTOR DETAILS
MATERIAL: STEEL TUBE 2.0 OD x 1.1/2" ID
FINISH: CADMIUM-PLATED

PR 376/1 ADAPTOR DETAILS
MATERIAL: STEEL TUBE 2.1/8" OD x 1.1/2" ID
FINISH: CADMIUM-PLATED

NOTES:
1. THE LIP HAS 6 EQU-SPACED NOTCHES, EACH 0.185" WIDE x 0.090" DEEP.
2. THE ADAPTOR IS A PUSH FIT IN THE SLEEVE OF THE AIR CLEANER.
3. THE THREAD HAS A LIGHT LEAD-IN CHAMFER.
AIR FILTER
(PATENTED)

VOKIES LTD
Filtration & Silencing Engineers