# A useful AIR COMPRESSOR FILTER

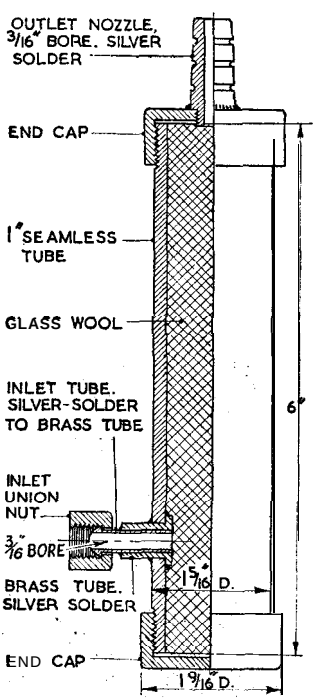
By R. C. Collins

SOME readers who have purchased Government surplus compressors may not be aware that these machines were designed for a certain aircraft application in which a film of oil penetrating through the system is not undesirable. In the amateur's workshop the production of this oil mist or spray in the compressed air delivery line plays havoc with rubber hose, and precludes the effective use of the plant for such purposes as tyre inflation or paint spraying. It has been suggested that to minimise the inclusion of oil mist in the delivery line the supply of oil to the compressor bearings may be reduced by fitting a drip-feed system. While this procedure undoubtedly will assist matters, it is a moot point whether or not it is desirable, particularly in cases where the plant is going to be used for comparatively continuous periods.

In an effort to exclude this undesirable oil mist I have experimented with several types of filter, and the one now described has been found to be both simple and extremely satisfactory. It consists of a small cylinder containing fine glass wool which is placed between the compressor and the air receiver. The cylinder stands vertically, the compressed air enters the filter at the side of the bottom of the cylinder, passes through the glass wool and out through a delivery nozzle, screwed and silver-soldered into the top of the cylinder.

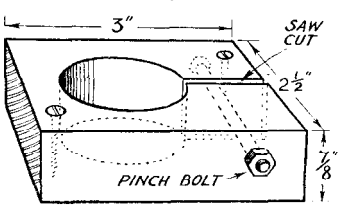
Materials

My filter, as will be seen from the illustration, consists of a 6 in. seamless pipe, screwed at both ends 1 in. B.S.P. Two caps were machined and threaded to fit the ends of the pipe. The inlet union consists of a brass tube machined with a flange which butts against the inside of the cylinder and is silver-soldered in *situ.* The inlet pipe carrying a union nut is silver-soldered into the brass tube and is connected to the compressor by flexible tubing. The bore of both inlet and outlet nozzles is 3/16 in.




*Left-Part sectional elevation of filter. Tube from compressor is fitted to lower nozzle, whilst the tube to the receiver is attached to nozzle at top*

*Below- Wooden base for mounting the filter*




The glass wool, which is the heart of the system, was obtained from Versil Ltd. This is spun glass, each strand of which measures about 0.001 in. diameter, I make the usual disclaimer re Versil. I have no financial interest in the company but they are insulation contractors whose business is carried on at Raynor Mills, Cleckheaton. This glass wool was lightly packed into the cylinder and the end caps were screwed tightly on to the extremities of the cylinder after a liberal smear of jointing compound had been placed on the threads.

In cases where high pressures are required from the air receiver, it would be advisable to braze the caps in position as well, but I purposely avoided doing this, as at infrequent intervals the bottom cap can be unscrewed and the accumulation of oil from the compressor drained from it.

In conclusion, I would offer a word of warning against substituting cotton wool for glass wool. Glass wool is, of course, non-absorbent, whereas, if cotton wool is used, the tendency is for the cotton wool, in due course, to become a sodden mass which may effectively block the outlet nozzle and cause an explosion, particularly if the compressor is not fitted with a relief-valve.