



The majority of these tips have appeared in club newsletters over the years. Please note that you use them at your own risk as neither the Bristol Austin 7 Club nor the authors can be responsible for the results of trying to follow the instructions given.

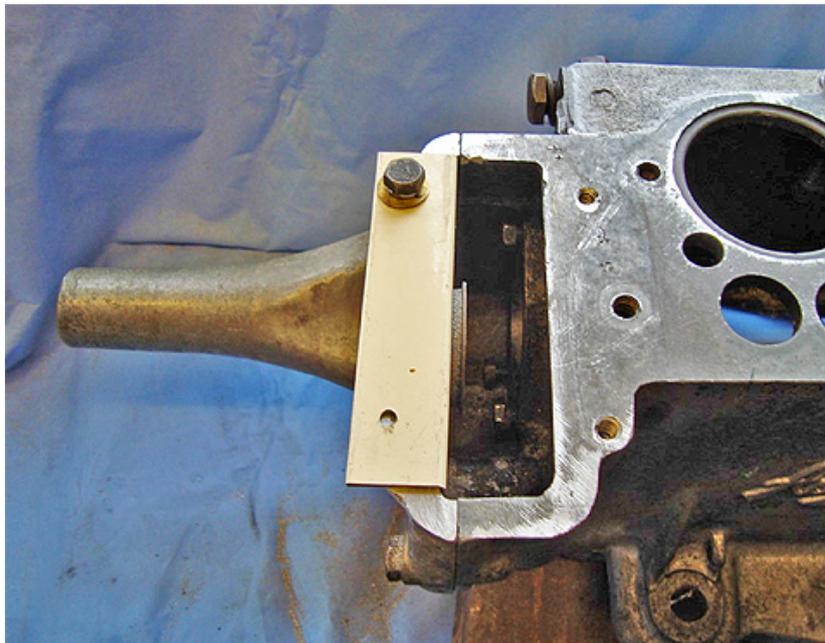
Repairing a Damaged Nose Cone (also referred to as Front Cover). The tip relates to RN, RP and later cars - by Ron Hayhurst

Replacement nose cones in good condition are becoming harder to source. If the starting handle dangles rather than latching in a horizontal position as intended, the fault lies in the wear/breakage of part of the casting inside the nose cone together with a badly worn pin that engages with the crankshaft when using the starting handle. The required profile can be reestablished by machining out the damaged part and shrinking in an insert with the required profile. A new pin should use a high tensile steel such as is found in a big-end bolt. Knock out the old pin noting the groove in the middle. File a similar small groove on one side of the replacement pin, apply Loctite 270 (Studlock) and thump the depression seen at the end of the shaft down into the groove in the pin. Machining inside the nose cone just isn't possible without some kind of jig and making up an insert with the correct profile is best done on a milling machine. The depth machined into the cone and the length of the new insert needs to be carefully dimensioned. There is very little distance between the pin on the starting handle shaft and the dog on the crankshaft when rotating the starting handle backwards (e.g. for the next attempt at cranking). I was very pleased to get Malcolm Watts to do the machining for me. He made an excellent job. Apart from looking better with a latched up handle, a new pin nesting in a new insert should greatly help to reduce the loss of oil along the starting handle.

Now the other more "terminal" damage that can be inflicted on a nose cone is to have one of the lugs that secures the dynamo housing shear off. I was lucky enough to get a skilled welder to build up the missing area ready for drilling and tapping. It is obvious that the new hole has to be in exactly the right place so I was left with the problem of making a suitable jig and then securing the awkward shape of the nose cone prior to doing any drilling. As you will see in the picture, bolting it to an empty crankcase turned out to be the answer. To make the simple jig I located a strip of steel from an old drawer runner that had a turned over edge about 3mm deep. The strip was cut to the exact length that would allow it to sit inside the rear edge of the nose cone.



New insert



With the turned over edge pulled tight against the rear edge of the nose cone the location of the remaining good hole was carefully transferred to the strip and a  $1\frac{5}{64}$ " hole drilled. This was reamed to  $\frac{1}{4}$ " diameter. With the strip bolted to the nose cone the location of the "missing" hole was determined and centre popped prior to drilling  $1\frac{1}{64}$ ". Although the tapping size for  $\frac{1}{4}$ "BSW is  $\frac{3}{16}$ " I decided to leave a little metal in case the new hole in the welded up lug needed

squaring up after my attempt at drilling. I now had a jig. Well ... I did dance around for a bit and then it was lunch time!

Drilling out the lug still posed a bit of a problem as I wasn't confident that working on my own I would be able to drill square on to the cone. Fortunately I was able to dig out a frame which hadn't seen daylight for more years than I care to remember and was able to mount the drill and chuck into it. With the jig bolted on to the good hole I was then able to fit a G clamp to the frame and made the 11/64" hole. The crankcase continued in use as I tapped the new hole 1/4"BSW.

Finally I dug out a couple of long high tensile bolts with a 1/4" BSF thread on them and cut them down to make a couple of studs; the new threads being made 1/4"BSW. These were then installed in the repaired nose cone again using Loctite 270.

### **A few more thoughts**

Cars with a three speed gearbox, such as the early RN Saloons, have a nose cone with an overall length of 7 1/4" - part number 1A 459. The associated shaft is 7 7/8" long - part number BD 202. The later RNs, and the RP Saloons, with the 4 speed gearbox, have their engines mounted further forward and therefore have a shorter nose cone which is 6 1/2" long - part number 1A 559. The shaft, part number BD219, is 7 1/8" long. The earlier items can be fitted into the RP type models with no problem other than sticking out beyond the radiator surround, but, if you are a purist, you will be seeking the shorter one!!