



# Fitting a Replacement Battery

Alan Hames



Replacing an obsolete battery with a replacement can pose challenges, as the following article, reproduced here with kind permission from the author, ALAN HAMES, C.Eng., MICE, MCIHT, points out.

Alan is a multiple concours winner in UK, with his 1972 E Type V12 - AVV 1 - which he has owned from new.

## Fitting of a new battery to the V12 "E" Type

### Installation Problems with the substitute "Lucas 068 Battery" into a V12 'E' Type Jaguar

Over the years since 1971, when Lucas provided to Jaguar their red top and translucent cased "Pacemaker" battery, with their "one shot topping" system, times have changed and this battery has not been available for at least 30 years. The new battery, presently listed by Lucas as being the replacement for both the originally fitted Lucas "Pacemaker" and the subsequent "Lucas 088/4" battery on the V12 'E' Type, now presents we V12 owners with problems when fitting anew.

When attempting to fit the currently listed replacement Lucas battery to the V12 "E" Type, it will be found that the main casing is slightly larger than the original, which makes fitting into the below battery tray very difficult. Additionally, the battery top and terminals will not allow the fitting, as before, of the standard square retaining clamp, which has previously been located on a ledge, 20mm down from the top of the battery. As a result, the retainer when fitted at the top of the battery requires that the two retaining clamp rods both need to be extended by about **18mm**. The new battery top layout also repositions the two terminals at a higher level and the short positive lead and clamp, only just reach with some stretching.

The attached pictures of the original **Lucas 088/4** battery show the battery top layout with the lower fitting point of the square battery retainer clamp. Also the lower disposition of the two terminals can be seen.

Pictures of the new **Lucas 068** battery show the square battery retainer, now fitted directly to the battery top, which is then about **20mm** higher than original. As will be seen, this both traps the battery lifting handles, (not really an issue, as to lift the battery the clamp would always be first removed), but with the retainer in place this does cover the two top of battery venting holes. (Hopefully not an issue?)

The following are measurements for comparison of the main dimensions of both batteries, which will explain why there are problems with fitting this larger battery into a very restricted area: -

### Battery Dimensions & the Arising Problems:

#### **1. Earlier Lucas 4 Supreme 088/4: (Bar Code: 5..012445 816288)**

Length: **247mm**; Width: **165/170mm**; Height: **181mm / 202mm**

#### **2. Current Lucas 068 Premium:**

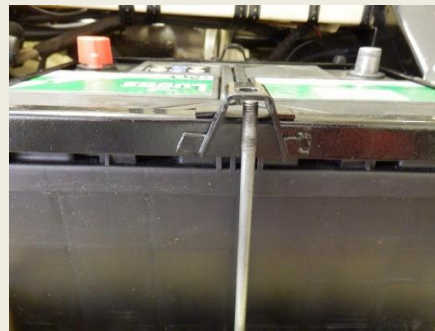
Length: **255mm**; Width: **175mm** Height: **200mm + terminal post 20mm**

The attached pictures make clear why the new **Lucas 068** battery, due to the longer casing length of **+ 8mm** and with greater width of **+ 5mm**, does not allow it to sit down into the battery tray.

Also the **Lucas 068** battery, being **20mm** higher, the retainer rods are now approx. **18mm** short.



**Lucas Original 088/4 Battery - In Tray**



**Lucas New 068 Battery - Short Fixing Clamps**



**Lucas New 068 Battery - Not Fitting in Tray**



**Lucas New 068 Battery - Shaved off Corners**

**Rectification measures to fit the presently available substitute Lucas 068 battery:**

Following finding problems with the new battery and assuming that there was no alternative battery to match the original, attempts were made to resolve the problem using the provided **Lucas 068** battery:-

1. **Jaguar Battery Tray:** The problem with fitting into the battery tray, after some thought I managed to overcome by trimming off the plastic corners of the protruding and redundant battery bottom clamping system. This then allows the larger casing of the **Lucas 068** to fit, (now very tightly), into the now available plastic battery tray and just between the two internal bulkheads. If, however, it is found possible to obtain the original Jaguar fitted metal battery tray, (No C36165), then although still a tight fit, it appears likely that the trimming of the battery corners may not be necessary.

**(Trimming of battery corners must be done with great care to ensure the main casing is not damaged)**

2. **Jaguar Battery Retainer Rods:** These, being both approximately 18mm short, I sourced two longer retainers from 'Barratts'. These have just allowed the safe clamping in place of the battery.



## Lucas New 068 Battery - Just Fitting into Tray      Lucas 068 Battery Installed - Longer Fixing Rods

As can be seen, I believe that I have managed to make adjustments to the battery and the retainers, that now allows fitting of the, "off the shelf", Lucas 068 battery as sent to me. However, it is clear that the fitting of this battery does require some help and guidance to anyone new to the problem.

If Lucas can be prevailed upon to remanufacture either the original **"Pacemaker"** battery, or the **"Supreme 088/4"** battery, this I am sure would be much appreciated by many V12 'E' Type drivers in the "JDC".



**Original Jaguar V12 'E' Type Lucas "Pacemaker" Battery Shattered after Explosion**

Finally, a word of warning when working near a battery when "on-charge", as this is what happened to an original Lucas "Pacemaker" battery when a short occurred causing a spark. The ensuing explosion at the time was catastrophic, with battery parts and acid everywhere!!! Take care.