V12 Distributor shaft separation.

This is the explanation for servicing the V12 LUCAS distributor, out of the engine.
Covering the separating of the 2 vertical shafts.

The Driven Gear on the end of the shaft is held in place with a knurled pin. I have NEVER removed that pin. Tried many times, fear of shattering that Driven Gear always stopped the process.
Attempted to drill it out on this unit, NOPE, barely a mark. I suggest Lucas has the serious shits up with someone with this sucker.
Most other Brands have that pin as a sacrificial item, or a Nylon Driven Gear, like a fuse, so if the distributor binds in that housing, the pin/gear will shear, stopping the engine, and basically saving other components.

1) Remove the 2 weight springs, one end will suffice.
2) Using a wide blade screwdriver, insert as per the snap, and CAREFULLY lever the Outer Shaft off the Inner Shaft.
CAREFULLY is the word here, as there is a SMALL plastic “split collar” down inside that Upper Shaft, and is a snug fit over the “tip” of the Inner Shaft. Most are crumbled and missing. They are NLA, and I use a suitable O/ring in its place, which is explained near the end. This collar is intact (RARE), and hence the CAREFUL advice, coz if you be silly, that collar will go walk about, and never appear again.

Unhook the 2 springs.

Start of the CAREFUL separation.

Separated.

Here it is. That “Split Collar” is the thing on the far left. The “nipple” it sits over is clearly visible on the top of the Inner Shaft.

Underside of that “Outer Shaft” showing the “knobs” that engage the weights.
That washer is NOTHING to do with this, just me being slack and not clearing the work space.

The “Inner Shaft” showing the fibre washer I made to fit at the base, as the Lucas Service Kit is long time NLA. Also the “nipple” for that split collar is visible.

That’s as simple as it is.

If the Inner Shaft is stiff to rotate in that Alloy Housing, I soak that unit in a tub (Ice Cream tub, after you ate the Ice Cream) of Diesel Fuel, and come back in a few days.

There is an oil hole in the side of that housing, so a few drops of ATF, rotate that shaft, a few drops more, and so on, until the rotation is nice a free and smooth.
Look down in the engine hole where this came from, and note the Spiral drive gear on the Jackshaft, and the small “trough” that should have oil sitting in it to lube this gear drive arrangement, AND allow some oil to “spiral” up that Inner Shaft lower section to prevent seizure. Most I have inspected have been full of sludge, so clean the trough, and save the distributor.

Reassembly is the reverse. Lube that Inner Shaft top section, Synthetic Engine Oil is fine, slide it over the Inner Shaft, and fiddle with the weights until they mesh, connect the springs, done and dusted.

That “Split Collar” as mentioned ,is long time NLA, so if yours is missing, or crumbled to dust, scratch around and use a small O/ring in its place. Just REMEMBER when removing the rotor in 1 years time, HAHAHA, you will remember, to lube that shaft will you not. PUSH down on that Star Wheel as you lift that rotor, or you will screw the springs down below, as they also, are Long Time NLA.

NOTE:

Very EARLY, as in some preHE and Carby distributors DO NOT have that “split collar”. They have a slot headed setscrew, like any other “normal” Lucas distributor.

That fibre washer I made earlier is for the Outer Shaft to sit on and acts as a thrust washer. The original was a strange “eared” looking thing, and the “ears” were meant to stop weight rattle noise. I doubt anyone would be hearing those weights rattling above all the other noises going on, so again, I reckon Lucas had the shits with someone back in the day.