

Espada Single Distributor
Cap/Rotor/Points
Conversion Bob Staaterman

I was faced with getting a new cap, rotor, points and ignition wires for my series II car. The cap & rotor alone are quite expensive so I looked at the various alternatives. I found out that for my car the Jag cap utilized by some others would not work on the style of rotor I had. So looked into adapting the Jag cap & rotor to work on my distributor. It turns out that I only needed to make a mounting adapter for the Jag rotor and then everything would work.

I also wanted to eliminate the points but I preferred to have the car remain stock looking so I went with the Pertronix Ignitor system which is completely self contained in the distributor body even with dual sensors that were replacing 4 sets of points. There's more room now than before. They also have an Ignitor II series which has additional features but Pertronix claims that two sensors will not fit in that distributor housing. I'm not so sure about that.

I did think about the various crank triggered digital ignition systems that some have successfully installed but since I wanted an original look I didn't use these. It's very clear that technically, they are superior. There are also other systems available which have been quite successfully installed in these cars there but these all required two external boxes. Some actually still use the points. That I did not want.

I sent the dizzy off for an initial test on a Sun machine to determine what was happening and whether it needed a lot of rebuilding. I was lucky and except for the points which were a disaster the bearings and advance mechanism were very good. If I had to spend a lot of money fixing the advance mechanism I might have opted for the digital direct ignition solution.

Servicing the dizzy.

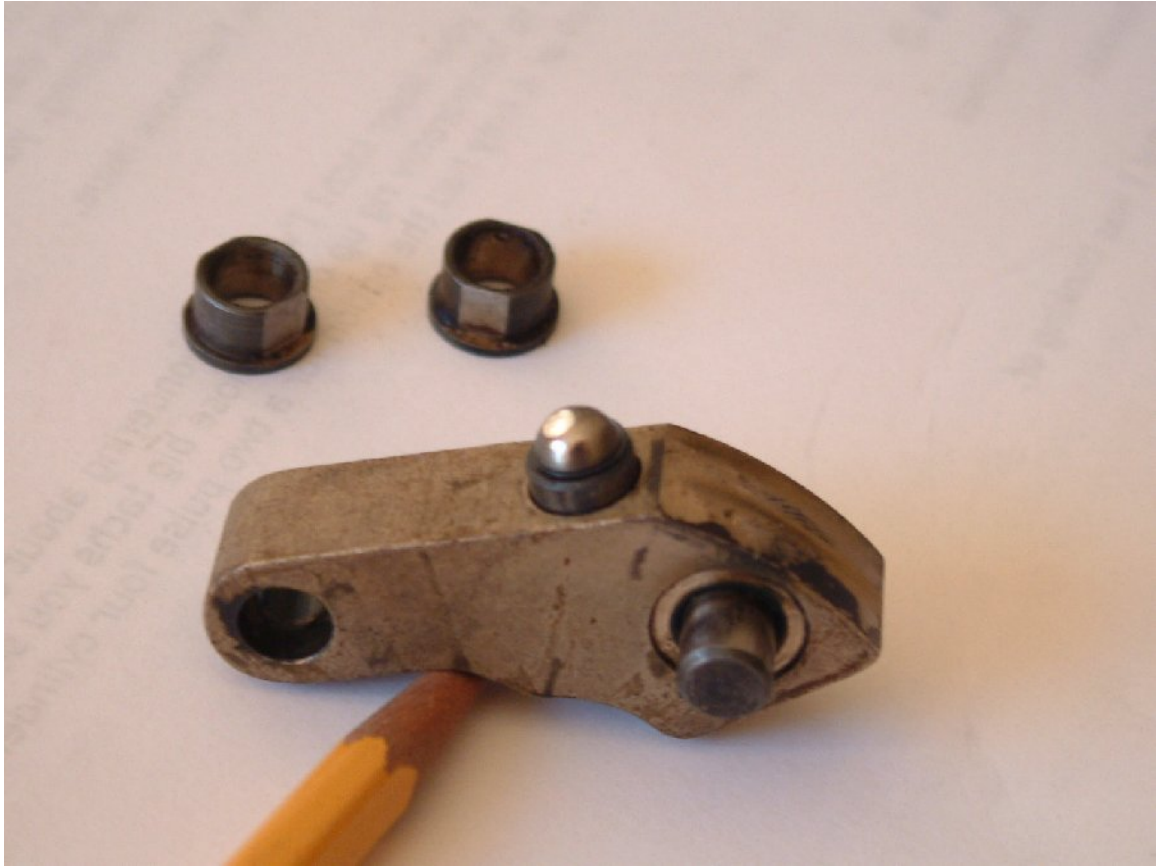
I'm not going to go into the complete service of these distributors because that's not in the scope of this article, there are other much qualified sources than I out there on this topic. Briefly then, if you look at the first picture you can see the depression mark worn in the cylinder by that spring-loaded tip in the second picture. The bright mark in the second picture is the wear mark. What was recommended to me was to use emery cloth to smooth out depression area in the cylinder (first pic) and similarly make the spring loaded pins in the weights uniform in shape. These pieces were reviewed by someone who does a lot of rebuilding and calibration of the Ferrari versions of these distributors and he suggested this approach as the wear was not that bad. If yours is worse then you had better get some help. This part of the distributor was then cleaned lubricated and reassembled. These types of greases were recommended to me.

Go to www.McMaster.com and enter the part numbers from below.

Dupont Krytox Synthetic Grease and Oil High Temperature Xht-AC Grease, 2-Ounce Tube # [10195K25](#)

Dupont Krytox Synthetic Grease and Oil Extreme Pressure Gpl 215 Grease, 2-Ounce Tube # [10195K32](#)





Parts List For The Conversion

Jag V12 Marelli cap & rotor form the later XJS model. There are knock-offs out there, which I've, been warned to avoid. I got mine from a Jaguar dealer for a total of about \$200.

Aluminum bar for the rotor adapter that I had the holes milled in for \$25. McMaster #6023K191 About \$12 and you only need 2" of the 12" length.

Big brass washer serves as the adjustable mounting base for the sensors. McMaster 92916A231. About \$5.

Washer had to have the center hold enlarged a bit to fit.

Pertronix MR-161 kit supplies the V6 reluctor and one sensor.

Pertronix kit for a VW supplies the other sensor you can throw away the rest of the kit.

Both are available from Summit Racing and other sources.

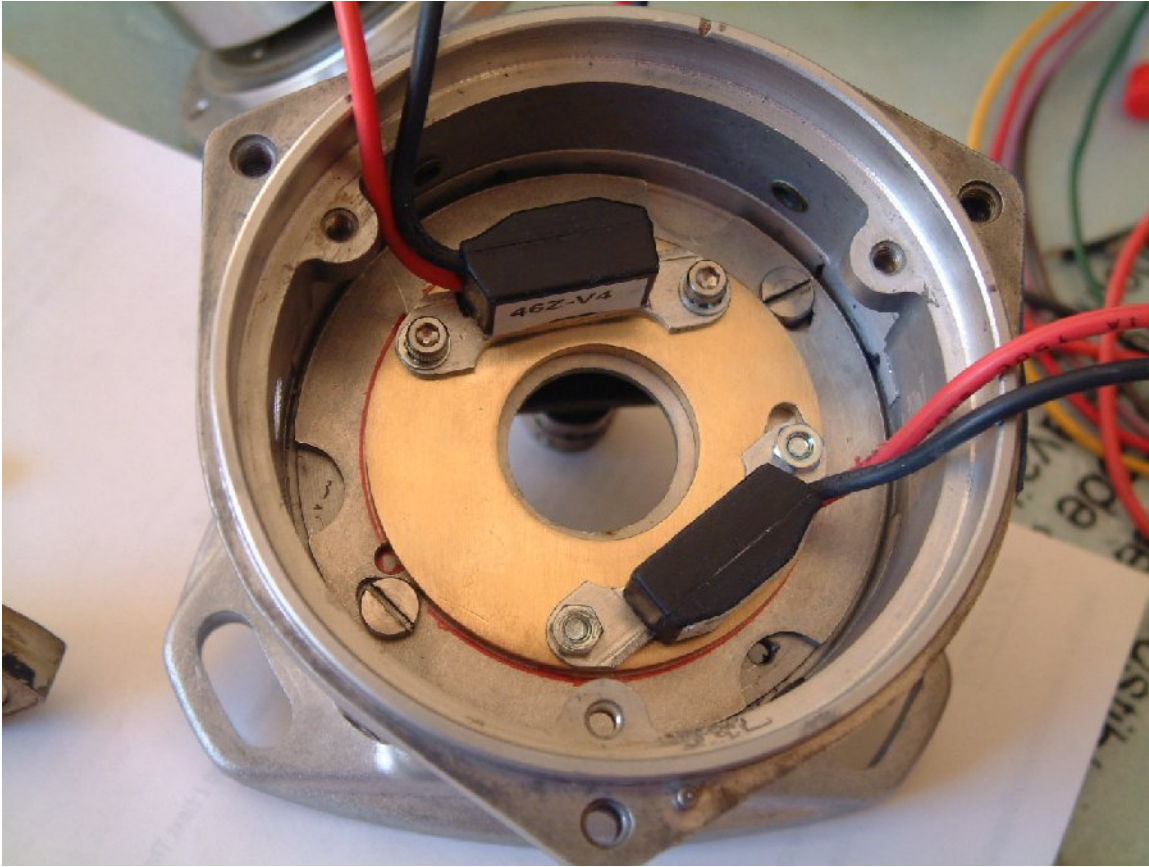
Aluminum tape for duct work or Lucas backing for anti-vibration on brake pads (what I used). This is to make the reluctor fit tightly onto the cam of the dizzy.

I laid the sensors out myself 60 degrees apart with the ability to adjust the sensors and I did the drilling and tapping required. There are no permanent changes to the dizzy so it's reversible.

Loctite wicking variety.

9 Volt battery.

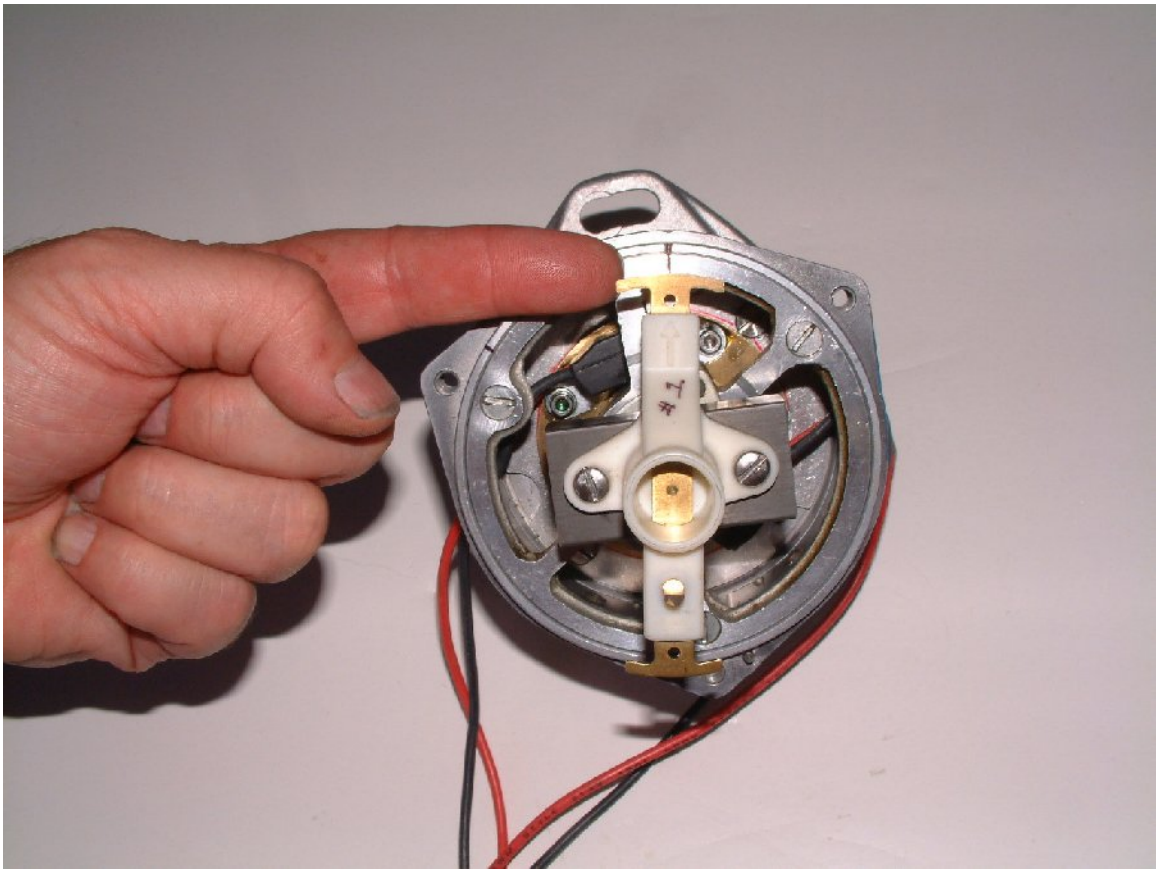
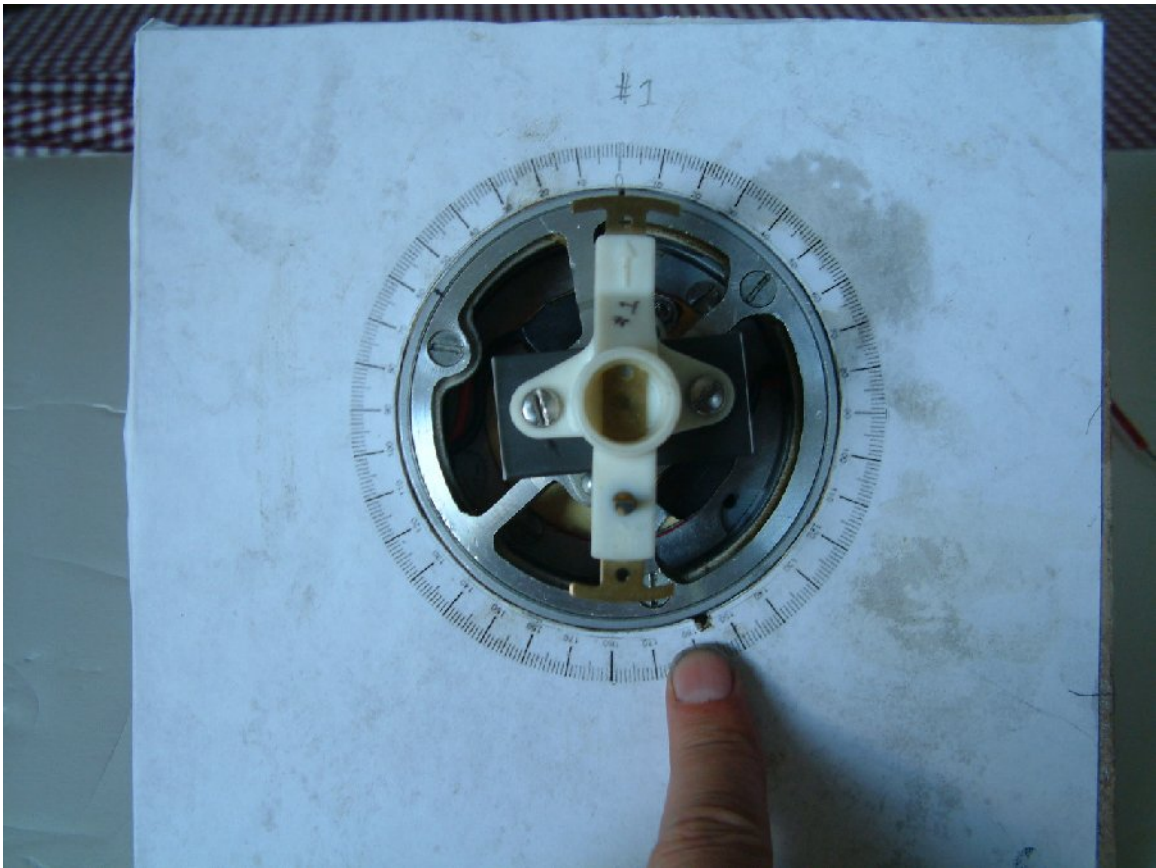
Installation Sequence.

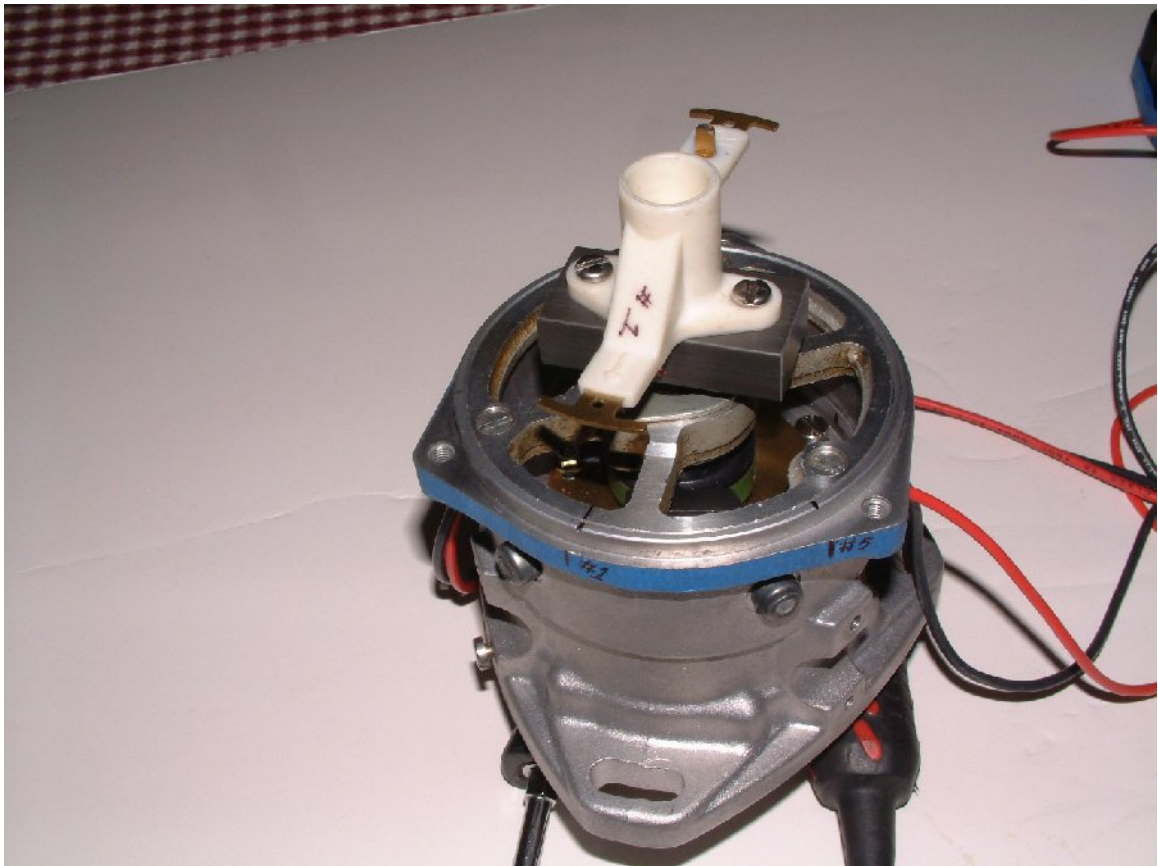
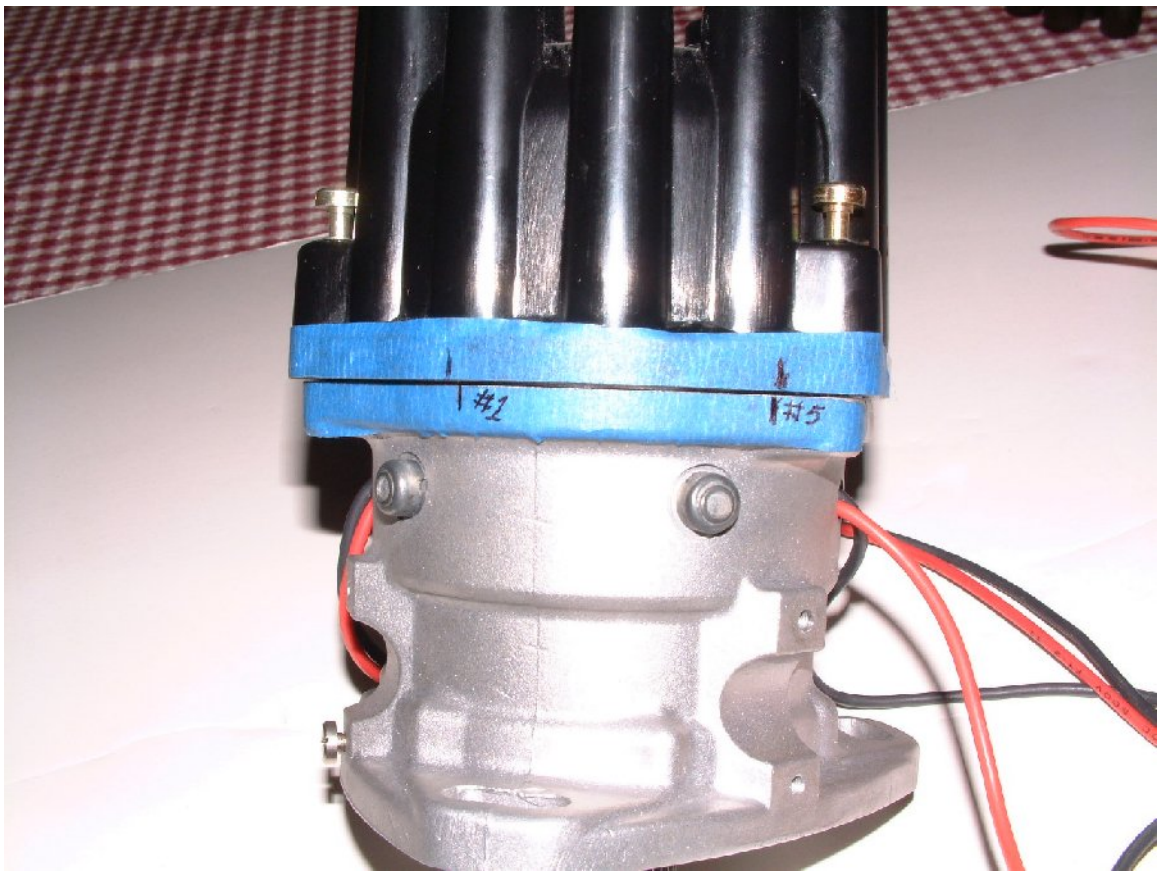


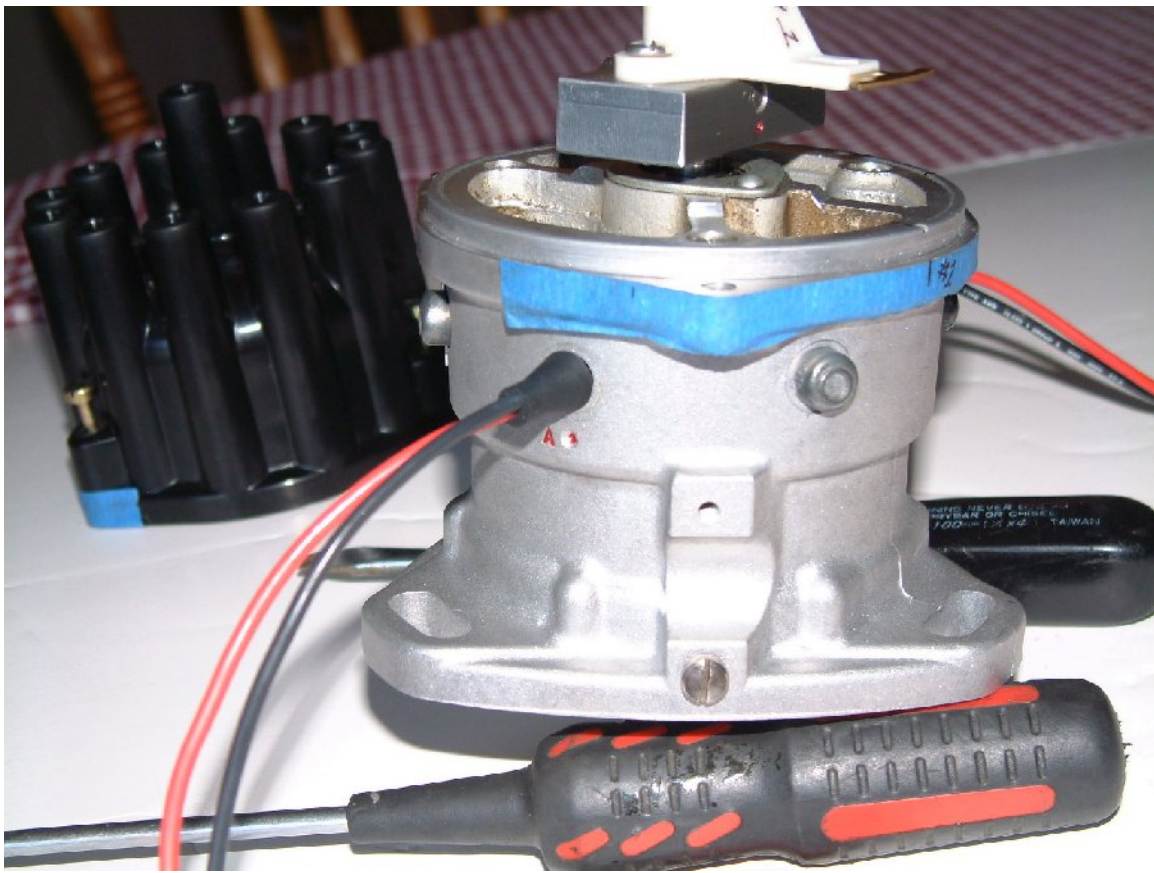
There is an aluminum base plate supplied with the kit MR-161 that you see in the picture underneath the large brass washer. It is secured with two of the original flat-headed slot style screws. Note that the holes are slotted. This allows alignment of the bottom sensor which is fixed in place to the base plate relative to the housing. The top sensor is fixed in place on the brass washer with adjustment provision provided via slots in the brass washer that can be seen around the bottom sensors post mounts.

To adjust the top sensor you loosen the two nuts on the bottom sensor and rotate the brass washer then re-tighten the two nuts.

To adjust the bottom sensor you loosen the two original flat slot headed screws and rotate the aluminum base plate. This moves both sensors at once. To accomplish these adjustments I printed a degree wheel, laminated it to a piece of poster board, cut out the center and made an alignment index notch so that I could slip this over the distributor body.







The idea is to adjust that bottom sensor in the first photo so that the reluctor causes the circuit to open just as the rotor is properly engaging the # 1 post on the cap. The blades on the rotor are very wide and can easily accommodate the alignment shift caused by the advance mechanism. I aligned it to be centered at the 2/3rd mark when at full advance so it ranges between the first 1/3rd and the last 1/3rd of the rotor blade during the advance range.

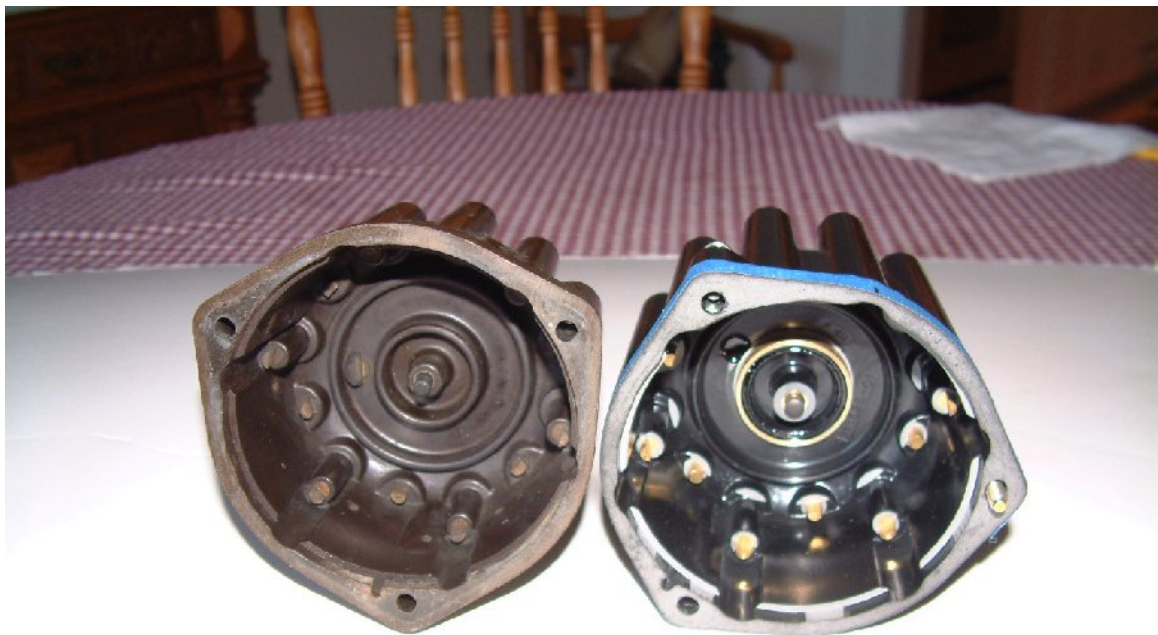
Similarly you adjust the top sensor by loosening the two nuts of the lower sensor and rotating the brass washer to get the next distributor post in physical firing sequence on the other plane of the distributor to be just opening the circuit in the same sort of physical range on that post as you did for #1. Eventually the #12 plug wire will connect to this post.

The final accurate alignment between the two sensors at an EXACT multiple of 30 degrees is performed on the Sun Machine. You're just getting the alignment between the two sensors close here. A cap & rotor are not required for the alignment/test on the Sun machine.

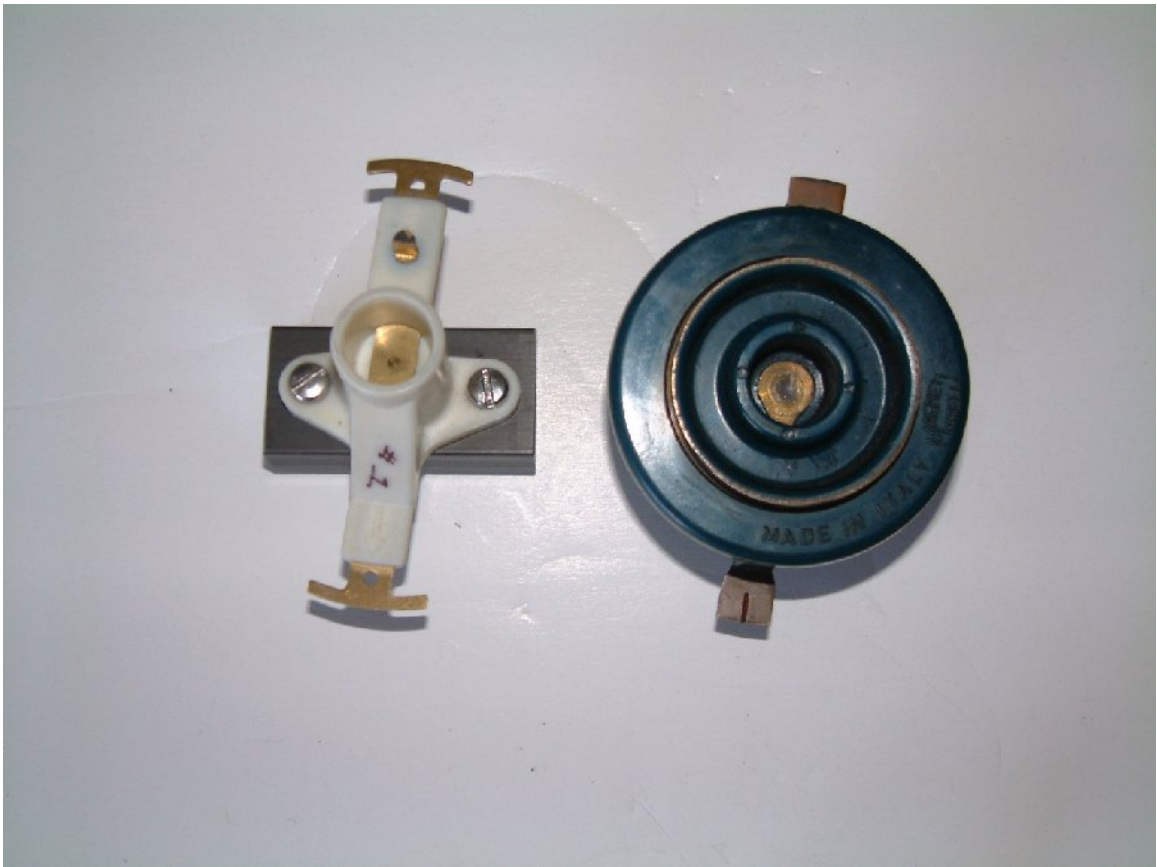
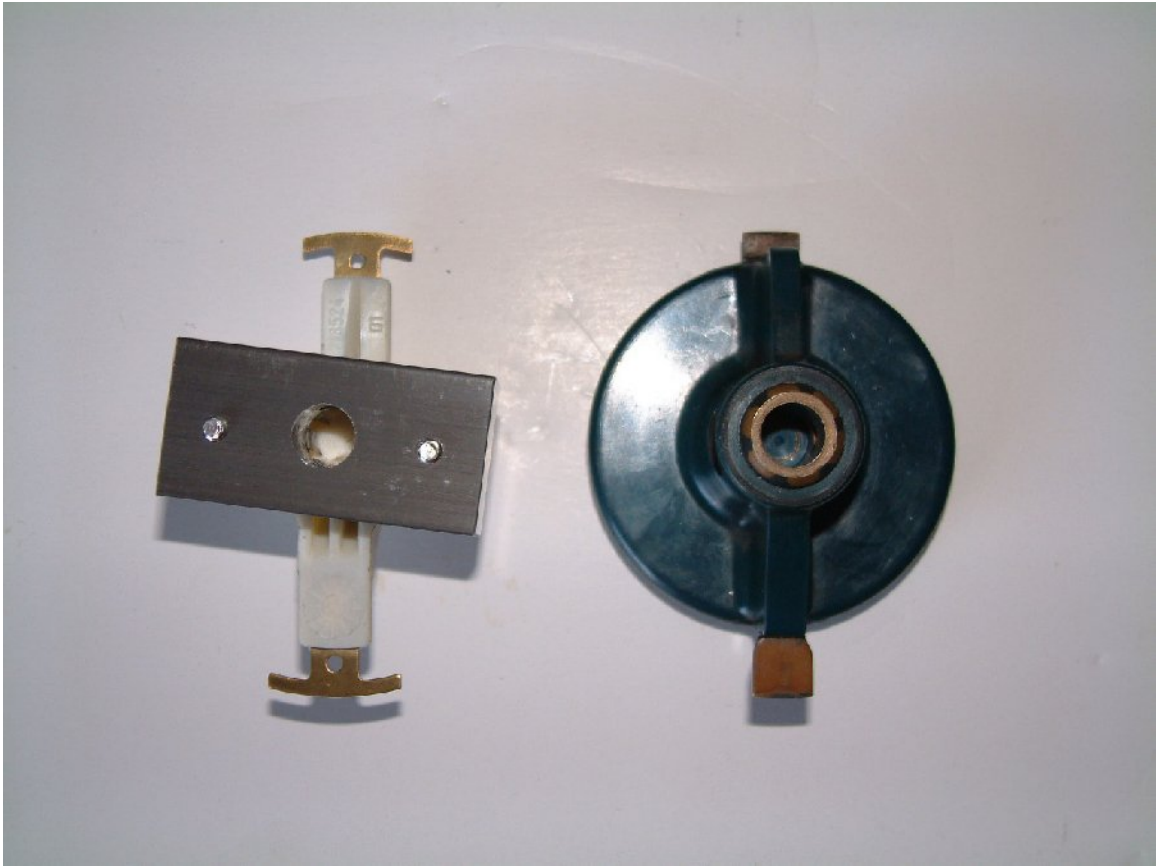
You test using a 9-volt battery.

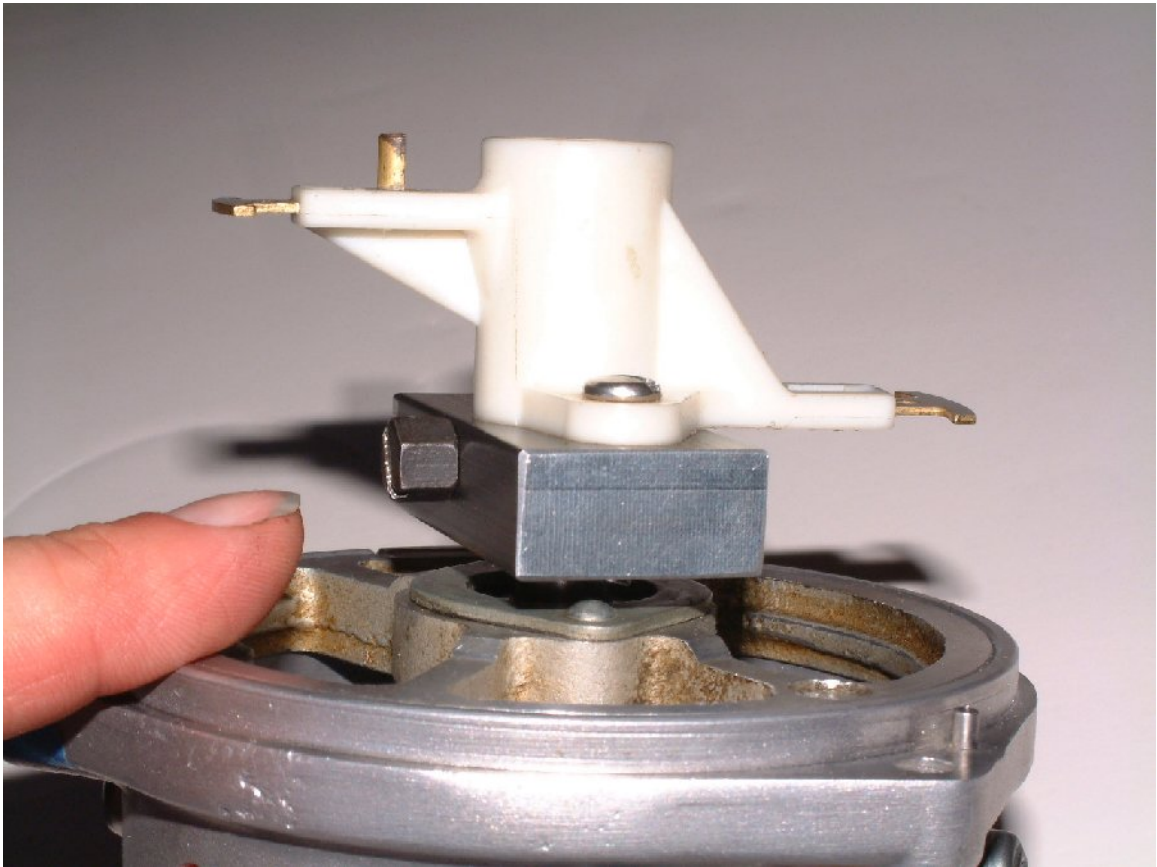
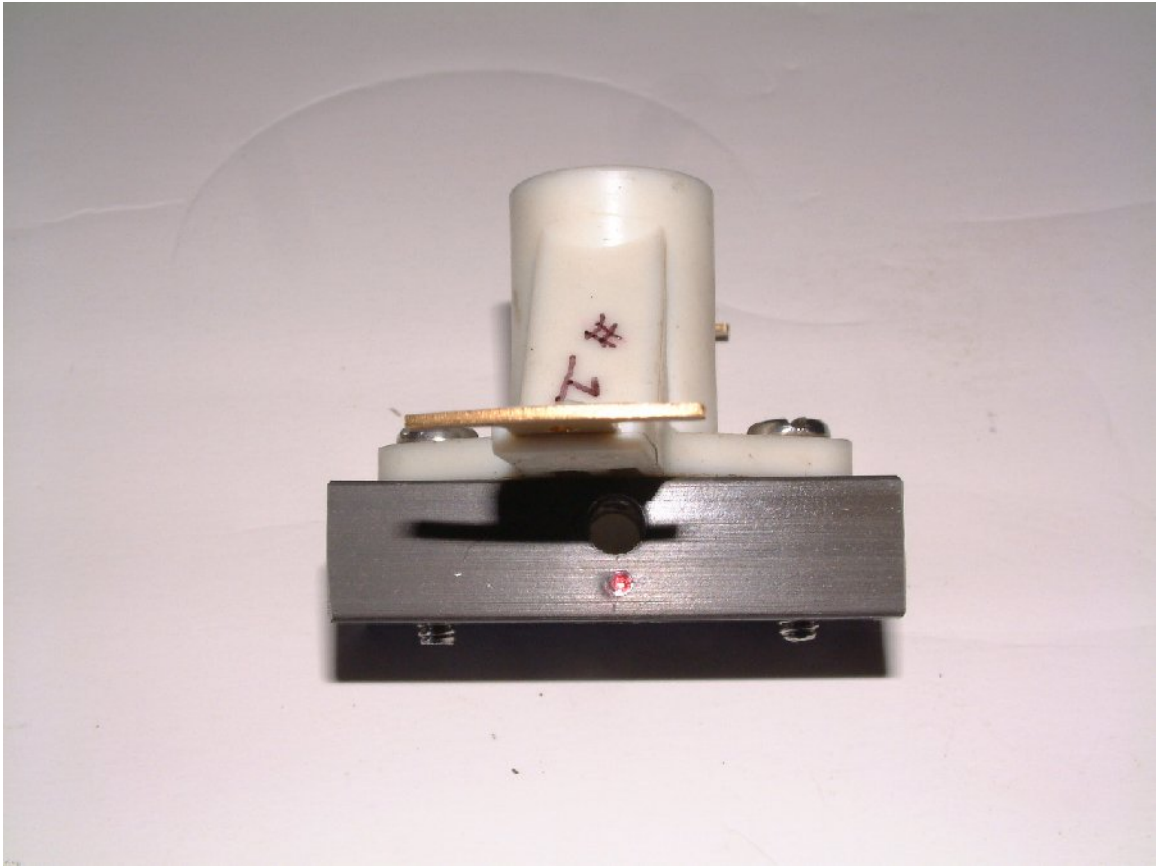
All of these adjustment screws and nuts should be Loctited upon final assembly.

Cap & Rotor Conversion









The screw going through the adapter threads into the center shaft and exits on the other side of the adapter. This is the original screw supplied with the distributor. That screw plus the ones retaining the rotor on top of the adapter should be Loctited.

You will have to measure and determine the location for the cross hole in the adapter that the locking bolt passes through so as to allow for proper alignment of the rotor height when the cap is on. In my case it was positioned closer towards the top of the aluminum adapter bar. I measured all of this and then had a machine shop do this work for about \$25.

The top of the distributor shaft sticks above the adapter bar. The rotor slips over that and is held in place with the two screws.

As you can see from the pictures the rotor arms are not oriented at a 90-degree angle to the adapter nor are they in alignment with that big center bolt. This is so as to duplicate the orientation of the original rotor. I got it approximately correct.