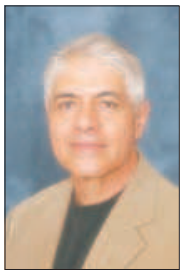
AUTO ELECTRIC CORNER

by Mohammad Samii, Sammy's Auto-Electric Service, Inc., ASE, SAE



My last month's rant regarding the subject of availability of complete units on the shelves of the auto part stores at low prices and the effect it has on small rebuilders to cut prices to be able to compete brought in a few responses, calls, emails...etc. and was the subject of a few chats here and there.

Going by the general consensus, it seems this is truly a wide-spread ordeal and covers many segments of our industry from light to heavy duty, as well as industrial and commercial units to a certain extent.

Along the same line, I had a 13808 alternator sent to me by a used car dealer (who also dabbles in minor auto repair) to be rebuilt. But he warned me that a replacement is on the shelf of a large chain store for $199.99 with a lifetime warranty! So again, I had to correct my prices to be in line with his expectations; otherwise I could have simply lost the sale.

This may not be a big deal or earth-shattering news, as examples of this are seen all over. But what makes this a little interesting (at least to me) is the said alternator was for a 2001 Saab 9-5 with a 3.0L engine! This is a rather rare vehicle, particularly in my little town, where I dare to say the numbers of 9-5 Saab's are probably less than what I can count on one hand, if not less! So the question becomes this; why a large company with thousands of outlets would bother to stock the shelves of a part store where the chances of a sale are quite rare due to the car's demographic...a figure that is perhaps widely accessible to the ones who do extensive market studies?

Now, please let me explain the second scenario and then I will try to come up with my attempt at a halfhearted answer.

A few month's ago I lost the sale of a 13939 alternator (02-04 Nissan Altima, with clutch pulley) to a very good customer who due to urgency could not wait until the next day. He got it from a local part store that had the alternator on the shelf and quite reasonably priced. Their low price did not surprise me. I knew who the unit supplier was and what they used instead of an OE clutch pulley. Since then I have gotten hold of an OE core and now have it in my stock. This thing has been sold a few times since then.

But what is surprising to me is the fact that the part store that had the unit then, still after six months does not have one on the shelf, as if theirs was the last one in existence! So here is my take on this:

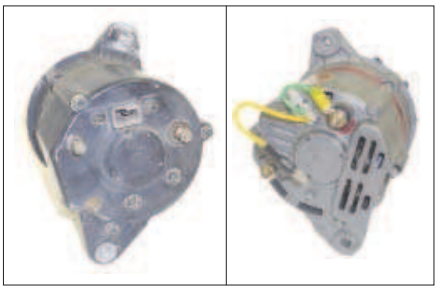


Fig 1 - LR-115-58 (12242) and 14231 as a close replacement.

I guess the large importers have batches of few thousands of some units made by their overseas contractors or factories to do an initial stocking of the auto-part store shelves, even if the profit margin is very little. Then they wait for the cores to return, pile up and be rebuilt here or elsewhere to replenish the sold stock, this time with a better profit margin. But this process is not a quick turnaround thing and takes time, and is perhaps the reason it is taking the part store almost 6 months to come up with another one to stock.

With the changes that are happening in the labor cost of nearly all international markets, can we expect (don't want to say assume!) that we are going to see some changes in the availability of cheap replacement units on every shelf? I certainly hope so.

Putting the Old to Use!

Pulling some old units off of the shelves to make room for the new is a common practice for most shops, but what we do with the obsolete units is something that differs from place to place.

A while ago, when core and scrap prices were quite high, most of the old units got scrapped for parts and purchased by various core buyers. But, some of us have the tendency to hang on to the old stuff in the hope of someday finding a better use for them.

The other week we had this LR115-58 Hitachi alternator (Lester 12242) that came to us for rebuilding. It was used on some old Allis-Chalmers of 70's vintage utility tractor rated at 15-Amps! It had a burned up rectifier and damaged stator that needed to be replaced, but there was no such thing in any catalog I could find. A voltage regulator was available but of no use with a bad stator and rectifier.

Looking around to see what we could use to fit in place of this unit, I came across a 14231 alternator (Nissan Pickup of the late 70's vintage) that I had pulled off the shelf and stashed away. Not only were the measurements identical, not even the pulley had to be replaced. The dust cover on the old alternator was not transferable to the new one but I didn't think that mattered all that much.

The only difference was that the original alternator only had an "L" terminal, while the 14231 had an "S" and "L", so we made a connector and ran the "S" terminal to the output, and attached a male connector so it could be connected to the tractor. (Figure 1)

Of course I charged a very good price for this discovery, a price that exceeded the selling price of the old 14231 a few times over. It all worked fine and this new customer who had come from a long distance was happy he had found us and promised more of his work would come our way!

So the point is sometimes there are uses for some of the old units, and not all of them should be scrapped. 14158, the old Honda Civic of late 70's or early 80's has been through the same where we used a lot of major parts (stator-rectifier-rotor) to build up 12056 Kubota alternator where they bring much better prices. Alternators such as 14184 14105, 14194, and others are available at some rock bottom liquidation prices through some suppliers, and they are still used in industrial applications or can be easily adopted. (Figure 2)

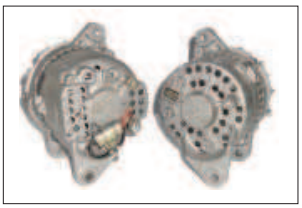


Figure 2 - 14597 and 14184, obsolete but still useful on forklifts

Are Clutch Pulleys Really Needed?

While tearing down a 13939 alternator core that had just come off a Nissan Altima (discussed above), I noticed that the brushes were barely worn and the rest of its parts like rectifier, regulator, and stator were so clean that they needed minimal

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attention for reassembly. They passed all the tests, and going by that, this alternator should have been working fine. But I noticed the clutch pulley was locked up. A locked-up clutch pulley becomes a regular solid pulley, and that is not a big deal...right?

In cases like this when the core is functional, I am always curious as to what was the reason for the replacement to begin with. And the reason for this is to warn the customer and prepare both of us for the inevitable call, saying the car still has the same problem, and the alternator is not charging!

Calling the shop and talking to the tech who had replaced this alternator was quite interesting. He is a very qualified and diligent technician, and the shop he works for is a top-notch place that has been my customer for 30 years. Even his now retired father worked at the same shop. When I got him on the phone and asked him why he replaced this alternator, he said it was charging fine, but it had a bad clutch pulley!

When I asked him what led him to make this assumption, he said in these words (more or less); "It was making a bad screeching sound on start up and shut down, when the A/C was on idle it had a bad knocking sound, and at low speed the belt flopped around so much that I thought it was going to fly off the pulleys, and the tensioner was moving and rattling from one extreme to the other just like it was getting ready to break off the motor...so I thought the clutch pulley was bad!" Wow...can't fault the man for correct diagnosis; one of the best descriptions of clutch pulley function I ever heard of!

So to answer the question if the clutch pulleys are needed...I have no doubt that a solid YES is the answer. Whether be it an Isolating Decoupler Pulley (IDP) or an Overrunning Alternator Pulley (OAP), or whatever else you want to call them, you must realize that OE has gone through a lot of research and expense to require it on their engines. Replacing them with a solid pulley for economic reasons to make the unit price more attractive to bargain shoppers is certainly something that must be avoided by electrical rebuilders. It is not easy to pay tens of dollars for something that at the surface is just a pulley, but we certainly have to, and there is no alternative. (Figure 3)

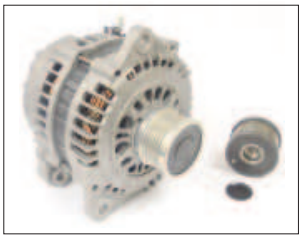

Figure 3 - A 13939 alternator and its clutch pulley

Not all technicians may have caught up with the concept and some still have their own serious doubts, but I expect better from rebuilders, particularly the ones who have been exposed to this technology for years via many seminars, which APRA has gone out of its way to provide in many Electrical Clinics for years.

Regardless of their manufacturer, they are widely available through major industry suppliers which some (like IAT and DuBois Marketing) have developed nice application charts for them with pictures, that makes the selection much easier.

Private Plant Tour

One of the perks I have had for writing this column and training for APRA is the privilege to get to know some of our industry leaders personally, and to become friends with some. Many have confided in me enough to give private tours of their facilities where they not open to others so easily.

This last May, right after the Electrical Clinic in Detroit, Eugene and Oren Neugebohr invited me to visit their facility, Auto Electric International (AEI) in Southfield, Michigan, which was within a few minutes drive from the Clinic's hotel.

I am not at liberty to discuss the details, but what I saw was truly amazing. It was a perfect combination organization, material flow, tear-down, cleaning, final assembly, and testing.

Figure 4 - Eugene Neugebohr (l) and Mohammad Samii at AEI

The rebuilding process was laid out very well, assuring no mix up of nearly identical parts. The batches selected for rebuilding were the size that could easily be manageable thru the journey without being separated from each other or mixed with any other units, as they stayed together in the entire process.

The company that has been around for 30 years and remanufactures for OE as well as aftermarket and is ISO-9001 and ISO-14001 certified, assures their customers of the quality they can expect from their heavy investment in qualified personnel, continuous training, and state-of-art computerized D&V test benches with the most recent add-ons. Their sister company International Automotive Trading in New York (IAT, managed by Ziv Tavor) is very well known in the rebuilding circle, and is

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