ERA EXCHANGE

YOUR GUIDE TO ELECTRICAL REBUILDING

October 2018 $12.95

AUTO ELECTRIC CORNER
C.C. Battery, Trombetta Relay and Delco DR29S Alternator

RX7 MITSUBISHI PUZZLER
Persistence Pays Off

COMMON SENSE | WHAT HAPPENED to Quality Control?

A WORD FROM THE PRESIDENT
You Need A Web Presence



Last month I tried to explain why every business today needs a website. In three words, it is **to be competitive.** You cannot compete it today's world without a good web presence.

Contrary to what you hear, there are plenty of customers needing the products and services that you offer. But without a website – most of them will never find you. Word of mouth and phone book advertising no longer bring in customers like they once did. Everybody, young and old, looks and finds new businesses, even on the local level, using Google, Bing or Yahoo. Search engines are used to find everything today, including phone numbers, addresses and hours of operation. If your business does not appear on the first page of a search, it will be difficult or impossible for new customers or old ones to find you. In simple terms, no website, no customers, no sales.

If you are already spending any money on advertising, some of it must go towards enhancing your web presence. Hopefully you have been at least thinking about what you want on your website. If not, look my website to get some ideas. You will find it at: **actionalternator.com.** Check out your competitor's web presence and look at the websites of other ERA members. You can use the Find-A-Rebuilder tool on the ERA homepage without logging in. It will give you all members within 200 miles of any zip code. If a rebuilder has a website, Find-A-Rebuilder will provide you with a link to it.

The first step in building a website is finding and securing a domain name, the cornerstone of every website. Domain names must be registered. The cost of registering is about $10 per year, less than most of us spend on business cards.

Your domain name should contain ties to your business, not be too long, and end in .com if possible. You can search the whois database to check if a name is already registered. This database is a list of all registered domain names worldwide, over 1.9 billion of them and growing. The domain search page can be found here: **whois.icann.org/en** But do not register it just yet.

The second step is finding a web hosting company to provide server space and assistance. Most hosting services will register your domain name for you at a reduced rate or for free as part of a package. That package should also provide online tools and templates to build your own unique website. The cost can be as low as $10 a month, less if you pay annually.

A few months ago PC Magazine compared and rated web hosting services and published the results online. To find it, just Google: "PCMAG web hosting services 2018". Not only did they rate and compare services, the article does a good job of explaining the terms used to describe different types of web hosting. Be sure to read down to the part about **Web Hosting Services That You Need.**

Shop around. Once you choose your web host, you can purchase the package and register the name at the same time. Next month, I'll provide some more helpful advice.

Mike Dietrich

NEW ERA MEMBERS

G-CORE Automotive Corp
Columbus, Ohio

Morse Electric Motors Co.
Gardner, Massachusetts

McGarity's Starter & Alt. Repair
Toccoa, Georgia

ABOUT THE COVER

Mazda RX7 100A Mitsubishi replacement alternator.

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office@electricalrebuilders.org

EDITORIAL ASSISTANT / Bob Thomas

DESIGN & PRODUCTION / Stephanie Schroeder

CONTRIBUTING WRITERS / Mike Dietrich, Mohammad Samii, Bob Thomas

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Rebuilding is Recycling!

INDUSTRY NEWS
& ANNOUNCEMENTS

2019 ERA Expo in Springfield, Missouri

The date and the hotel for next year's ERA Expo has been set. The show and the seminars will all be held under one roof at the Oasis Hotel and Conference Center, located north of downtown Springfield and about half a mile off of I-44. The Springfield-Brandon Airport is only 10 minutes away and is serviced by American, Delta, United and Allegiant. The hotel offers a free shuttle service for those planning to fly in. Parking is plentiful and free. Wireless internet is free throughout the facility. The hotel also offers a free breakfast buffet each morning to all guests.

The event kicks off again on a Thursday, April 4, with a plant tour of Springfield Remanufacturing Corp in the morning and seminars in the afternoon. SRC was started in 1974 as the remanufacturing division of International Harvester. In 1983, they became an independent employee owned company and now rebuild everything from alternators and starters to transmissions and diesel engines, mostly for original equipment manufacturers.

For Friday morning, April 5, a tour of Wonders of Wildlife has been scheduled. This one-of-kind attraction was built by Pro Bass Shops founder Johnny Morris, who started his career in sporting goods selling bait and tackle in the back of his father's liquor store in Springfield. Wonders of Wildlife is an national museum and aquarium. More seminar opportunities are planned in the afternoon. The Expo's show floor will open for three hours from 5 to 8 pm on Friday evening.

Saturday morning, April 6 begins with seminars, followed by a luncheon buffet that will be included as part of the show package. The show's floor then opens for three more hours from 1 to 4 pm. It will be followed by another seminar. Seminar topics are not yet finalized but will be announced soon.

Something special is being planned for Saturday evening at the hotel. Details will be forthcoming in a near future issue for that event. The ERA's Annual Meeting will be held Sunday morning, immediately following breakfast.

The 2019 edition of ERA Expo promises to to be an event that you do not want to miss. Mark the date now – **April 4 - 7, 2019.**



BBB Industries Acquired by Genstar Capital

Longtime ERA member, BBB Industries of Mobile, Alabama was acquired by Genstar Capital, a private equity firm, in August.

Rob Rutledge, Genstar's Managing Director, said, “BBB is an industry leader in the automotive aftermarket with a strong reputation for quality and manufacturing expertise. We believe we can partner with management to expand the product offerings for BBB’s customers through investments in new technologies, capacity expansions and acquisitions in BBB’s current and adjacent markets.”

Duncan Gillis, CEO of BBB Industries, said, “Because our products are mission critical to the operation of a vehicle, our key focus is to provide customers with quality, availability, breadth of SKUs, and service. With Genstar’s expertise and history of successfully building companies like ours, we look forward to transforming our company and taking BBB Industries to the next level while continuing to provide our customers with the highest quality products.”

AUTO ELECTRIC CORNER — C.C. Battery, Trombetta Relay and Delco DR29S Alternator



BY MOHAMMAD SAMII

Most of us rebuilders are familiar with the large industry suppliers from whom we purchase the bulk of our parts and units. There are also smaller family-owned operations that do not necessarily sell on a national level but do provide a very important selection of parts and tools not readily available from the big guys. I occasionally hint to such companies that are very important to us and for this issue I would like to put in a good word for C.C. Battery in Corpus Christie, Texas.

A fourth generation company in business since 1923, they are perhaps one of the oldest rebuilder/suppliers in the country. The company is currently owned and managed by Kenny Turner who is incidentally our own ERA Board of Directors' Vice President of the South Central region.

When it comes to older armatures, field coils and housings that are rare and hard to find, C. C. Battery is the go-to source who has come through for us so many times that it is hard to count and remember.

The latest example was a needed 1716 armature for a trashed out 1108911 starter that fits an antique John Deere Tractor (*see Figure 1*). A call was made and a nicely rewound armature arrived 3 days later at a very reasonable and affordable price. It could not have been any better. I understand the company also has access to a machine shop that can build up some damaged armature shafts that are no longer available, to provide even a greater service for the rebuilders in the need of rare items.

This company has a vast array of parts and services that I am sure is very unique in their local area, but I am happy they exist and do supply the industry with hard to find items. As I have mentioned before, support of such companies should be an urgent priority for us, the small and custom rebuilders who could really need the help of companies such as C.C. Battery.

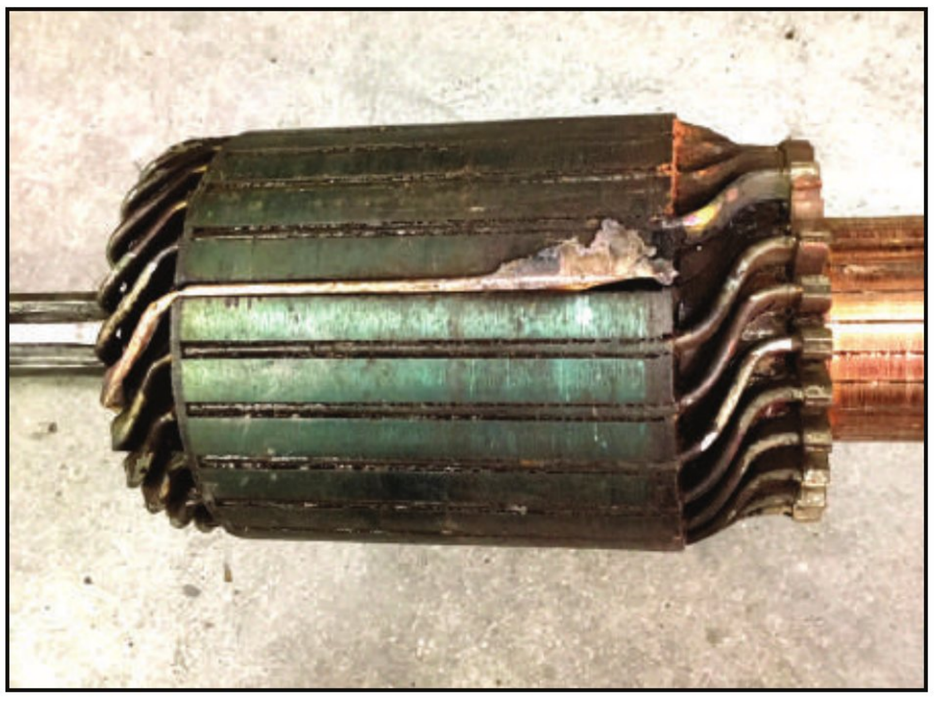


Figure 1 – Our ruined 1716 armature sent out as a core

Trombetta Power Relays

As more and more examples of these relays are showing up with DC motors, especially the ones for industrial hydraulic applications, I became interested in looking deeper into their design to see how well they are made (*see Figure 2*).



Figure 2 – Trombetta 684-1211-212 pump motor solenoid/relay

The company, Trombetta, headquartered in Milwaukee, Wisconsin with divisions in Mexico and China is a leading manufacturer of DC power switching and power management products. The relays for Ag, power sports, and DC contractors are a small portion of the overall company's product line that covers a wide range of electronic voltage regulators and highly sophisticated data-controlled power switching devices for industrial power control.

My example was a simple 12V power relay used to operate the DC motor of a hydraulic tail-gate, which had a Mahle MAJ 4519 motor (currently Mahle MM367). Since a new relay was on hand, I tore into the old one by drilling out the rivets to see what the inside looked like! As you can see in the photo (*see Figure 3*), it consists of a very well wound coil, wrapped with fiberglass type tape, the two-piece yoke halves, and contact to make for a sturdy design. This particular part is rated for 150 amps at 20% duty cycle and can handle in-rush current of 800 amps momentarily. This is an intermittent duty version in which the coil was drawing about 2 amps for activation. Continuous-duty versions of this type are also available.

Since their usage is on the increase, we try to keep one or two in the stock. They are available from J&N and perhaps other suppliers that I am not fully aware of. There are also some aftermarket versions of this relay

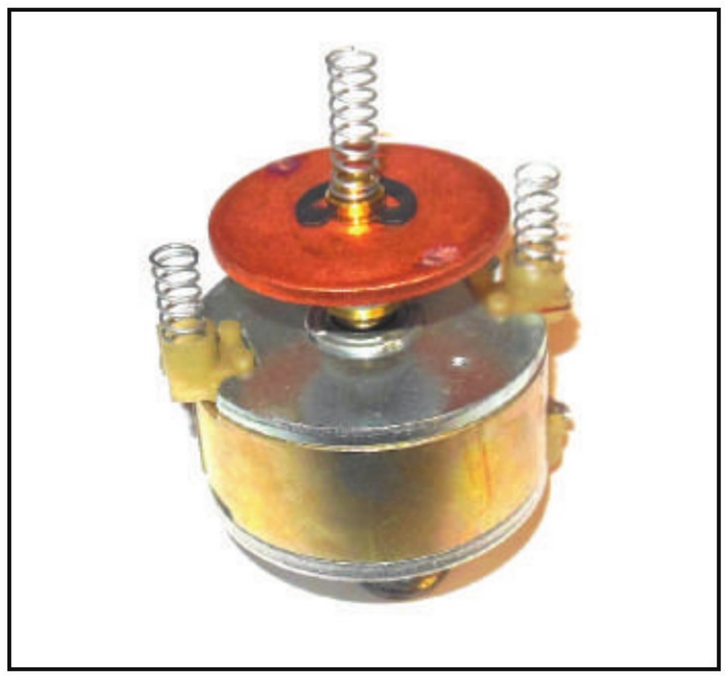


Figure 3 – Coil and contact disc of the Trombetta solenoid

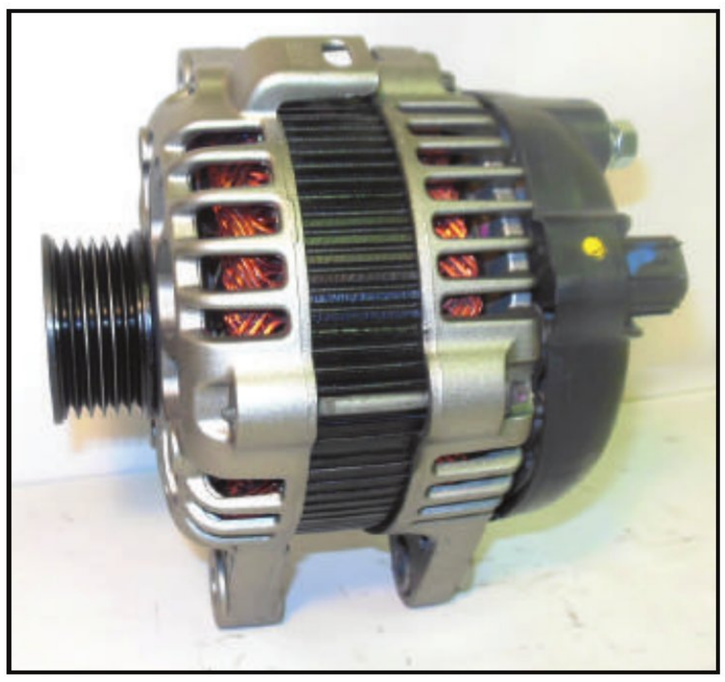


Figure 4 – 8487 Delco DR29S-type alternator for Hyundai

available, but I am not sure if they can match the precision and durability that the original items are built with.

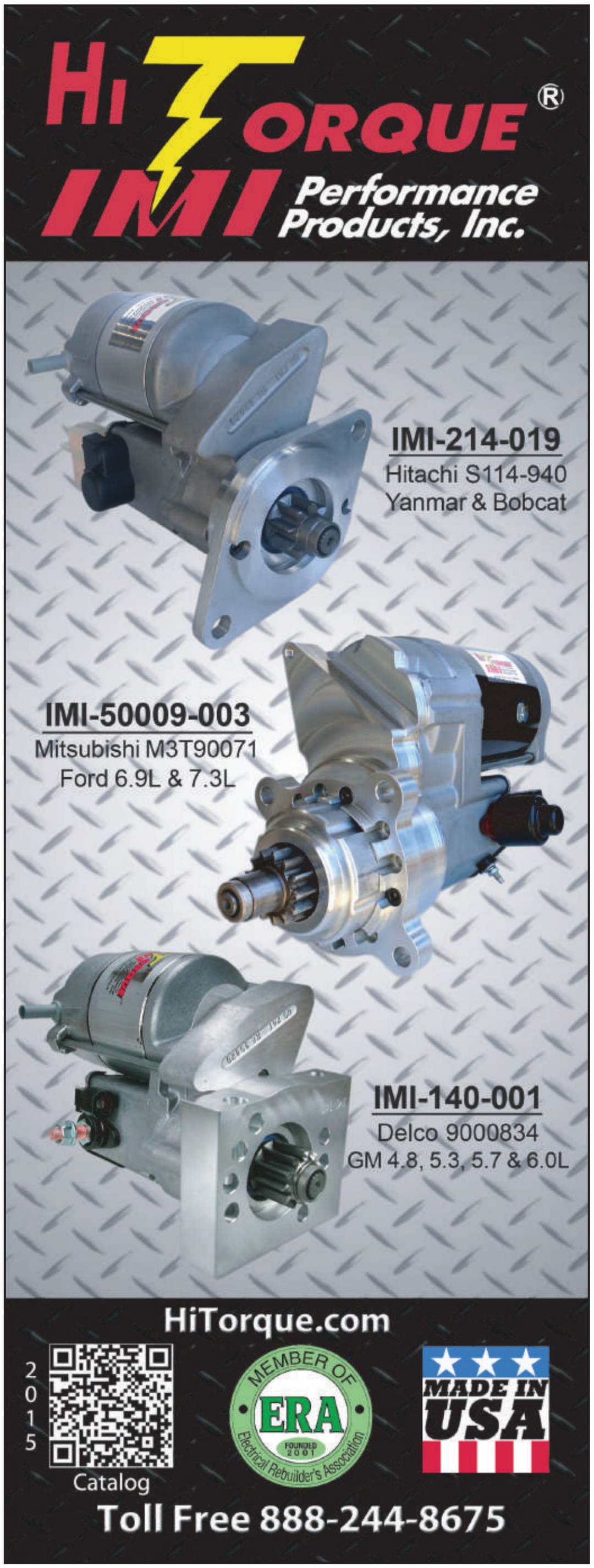
Hyundai/Delco 8487 Alternator

From time to time I share the details of certain units that are rare or new to me, to give you a heads-up when such things show up in your shop. I believe having some prior knowledge and information can always be helpful to a rebuilder when encountering unseen units.

One such alternator that we have seen a couple of times lately is a Delco 8400206 (Lester 8487). It is referred to as a DR29S type and goes on a 2011-2012 Hyundai Santa Fe, and later Kia Sorento with 3.5L V-6 engines (*see Figure 4*).

This alternator that also goes by Hyundai/Kia numbers of 37700-3C510 and 37700-3C-610, is available mostly at the dealers with a price tag of nearly $400 with very little availability in the aftermarket.

The alternator's plug-code has not been established yet but is very similar to #296, the typical Honda/Toyota square 4-pin plug but with one difference. Where the #296 plug-code has **IG – L – C – Fr** terminals, the 8487 alternator only has **L – C – Fr** terminals, meaning the "IG" pin has been replaced by a dummy "D" terminal. The alternator will self-excite with high RPM, but in



normal operation and testing it can be excited with a #194 light via the "L" terminal (*see Figure 5*).

For all practical purposes, this alternator can be considered a sort of Hyundai/Kia version of GM's RVC where changing the pulse-width of the signal applied to "C" (computer or COM) terminal will slightly change the voltage setting of the regulator. More about this when I am done with additional information regarding on-vehicle testing and scope captures for a near future article or the next ERA Show. But as I mentioned, activating the "L" terminal via a test light or #194 bulb will suffice for preliminary bench testing which gives you a 14.2 to 14.5V setting.

This alternator that is rated at 150-amps and built well with a very elaborate stator winding that contributes to a very strong power curve with minimal ripple (*See Figure 6*). The negative diodes are built into the SRE housing and the positive part of the rectifier and lead-frame are screwed in the SRE and are replaceable perhaps as a whole SRE assembly.

The stator to rectifier leads must be unsoldered to remove the stator from SRE housing. The rotor's slip ring is similar to the Delco 24-SI and easy to replace. The aftermarket version of the regulator is of course available through our industry suppliers (WAI's D2298 as an example) but I have not found a suitable brush and method for brush replacement yet. The last photo shows a breakdown of the alternator and it major parts (*see Figure 7*).

The replacement of the alternator is a complicated matter and requires evacuating the A/C system for compressor removal. We sent this job out to a qualified service customer of ours but provided the alternator.

It is one of those units that because of the labor involved in the R&R of the unit, one must make sure of the quality of the work and proper testing. A failure whether in or out of town will be a complicated and an expensive dilemma to deal with.

That's all for this issue. Until I see you again, keep up the good work. sammyselectric@sbcglobal.net

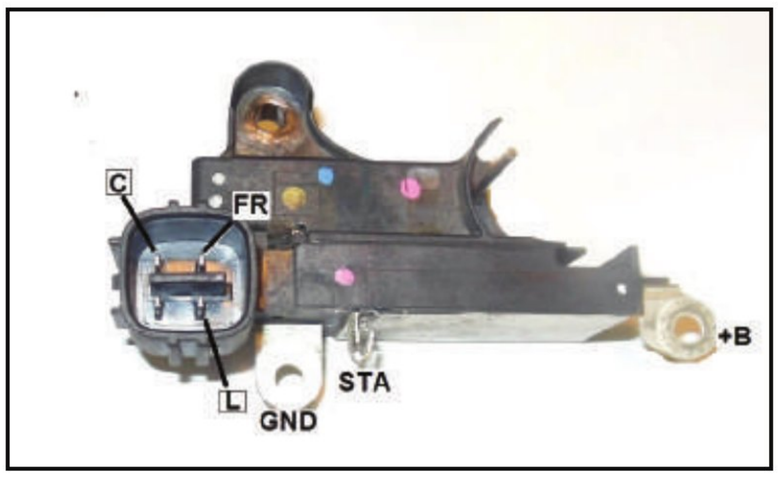


Figure 5 – Voltage regulator pins for the 8487 alternator

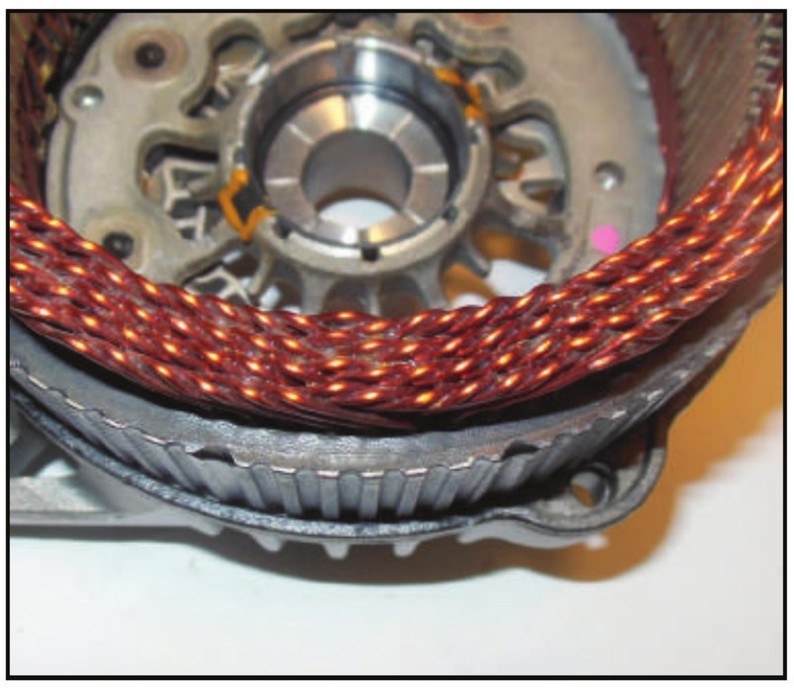


Figure 6 – Multi-row and heavily wound 8487 alternator's stator

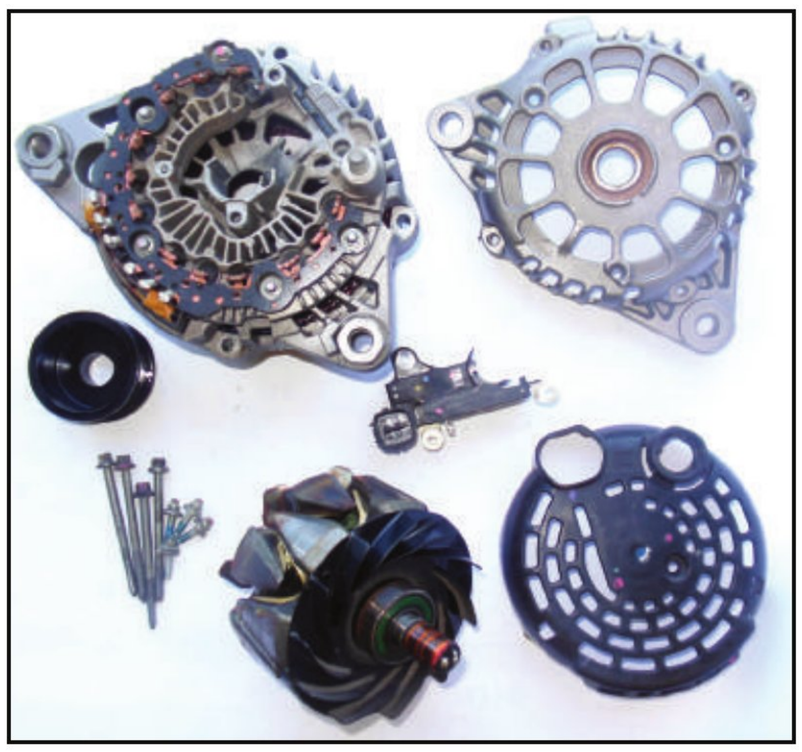


Figure 7 – Break-down and major parts of the 8487 alternator

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COMMON SENSE — What Happened to Quality Control?



BY BOB THOMAS

Over the month of August an alarming number of comments were posted on eight different threads on the Quality Concerns Forum on our website. Before that, there had only been seven this year. To look back even further, the overall average has been just eight Quality Concern threads per year, going back to 2004!

Does this mean that our supplier's quality control suddenly went out the window? Or is it just happenstance that so many problems appeared in the last 30-days? Here is a brief synopsis of each thread that was either started or commented on in August. You decide for yourself.

The most recent thread concerns a standard Delco CE bushing with an undersized ID. There were six replies to the original post. Most of them confirmed the same problem with either that bushing or a similar one with a different part number. Two of the posts stated they were reusing old bushings that were still within tolerances instead of trying to fit a new bushing that is too tight.

There is a thread about an aftermarket armature for a Denso starter with splines that get smaller moving away from the body, essentially making it tapered by .090" . One post on that thread confirmed the same problem but the other eight replies suggested using different suppliers.

Another thread concerned the hard rubber grommet used on 40 and 50MT motor terminals. It seems that some of those being sold do not fit a and allow the field terminal to twist when tightening the nut. There were two replies confirming the same problem. One suggested salvaging used grommets and the other said that he threw the bad parts in the trash.

One of the threads was actually started back in December of last year but replies on that subject part are still coming in. It concerns the most common Denso alternator brush, used in millions of alternators since the 1980's. There were eight replies last December, four more in March of this year, nine in July, and eight more in August. A few suggested possible causes of premature brush wear. But the original poster and several others confirmed the problem was brush quality. Many units had already been returned with worn out brushes after only a few months of use. Members were concerned by the number of units that they had on their shelves as well as those already on the road. This thread contained photos and descriptions of the bad brushes – well worth your time if you reload Denso brush holders.

There was a thread about aftermarket plunger assemblies for Denso diesel OSGR starters. The problem was an ill-fitting insulator that allowed the copper contact to intermittently short to ground. The unit it question was a John Deere factory reman and there were six replies, several confirming the same problem on plungers that they bought new. There was also another reply seeing the same plunger on a John Deere branded new China-made replacement starter. The consensus solution was to use OE plungers only on these starters.

A thread about ill-fitting Delco PMGR drain tubes that was started in January drew 15 replies, including five in August. Almost all of them confirmed similar problems on many different starters. Based on the number of comments, it seems that aftermarket drain tubes seldom fit like the original one did and some not at all.

The other two threads are both about problems with new aftermarket units. One concerns a replacement for the Mando starter-generator commonly used on golf carts. One member wrote that he routinely disassembled and checked every one of these before selling them. He claimed that 90% required some kind of repair or modification.

The second was about the control relay on an aftermarket Nikko starter. That relay inhibits cranking when voltage is present on the R terminal which connects to the alternator's trio terminal. That function prevents an operator from engaging the starter with the engine running.. While few rebuilders would bother to test that, one ERA member did. The original Nikko starter's relay contains an electronic circuit. The relay on the aftermarket starter had an R terminal but was apparently not connected to anything. Was that intentional to save money or did the "reverse" engineer guys just not bother to check an original relay?

In spite of all of this sudden activity on the QC Forum, I do not believe that it necessarily reflects a recent rapid decrease in quality. This is a trend that has been brewing for decades. Quality control has been in a downward spiral for years. The decline is fueled by customer demands for lower prices.

That pressure for the lowest cost originates with the end user and is passed upstream until it reaches the manufacturer. They make what we ask for. At present, rebuilders and at least some of our suppliers are trapped in the middle. Our installer customers are in the middle too. End user customers drive prices down because they believe that cheaper is better for them, based on the faulty premise that the quality of all available options is about equal. But we as an industry should know better.

The only possible answer is to educate the end user - your customers. The message is simple. You will get what you pay for. Junk is cheap. Quality costs more. While you are at it, tell your suppliers that quality is more important to you than the cheapest price, and back that up with whatever little buying power you may have.

If you are not using the ERA Forums, you should be – whether you are a rebuilder or a supplier. Almost all of the posts mentioned above provided supplier part numbers. They might help you avoid buying those parts, or using them if you already have them on your shelf.

RX7 MITSUBISHI PUZZLER
Persistence Pays Off



BY BOB THOMAS

This story began several months ago when ERA member Glen Mclaughlin in Myrtle Beach, SC, called me about a problem he had with a Mitsubishi alternator. The customer owned a 1995 Mazda RX7. His alternator had failed on the test bench. The guy was in a hurry and Glen was days behind with other work, some of it from commercial customers. So the quick solution was to order in a new alternator to get the RX7 back on the road quickly.

The new unit arrived and the customer installed it, only to return the following day saying that it failed to work right out of the box. It also failed to charge on Glen's test bench. At that point Glen ordered a new rectifier and regulator to rebuild the original core himself. That is also when he called me to see if I wanted the non-working new unit. He did not want to pay the freight to send it back, or spend anymore time with it himself. In his mind, it was a poor decision loss that he no longer needed. Even if the supplier replaced it with another new one, it would probably just sit on the shelf forever. After all, how many RX7's are still running on the road?

But Glen was curious as to why this particular brand new alternator failed to charge, so he offered to send it to me if I wanted it. He also thought that it might provide a topic for a future article, which as it turns out, it did.

Before I go any further, you should know a few things about this Mitsubishi alternator (*see Figures 1 and 2*). It is a 100 amp unit using the common two-pin plug first introduced by Hitachi in the 1980's. The terminals are S and L (sense and lamp) - plug code 300. It has a diode trio and is lamp activated. This car's charging circuit is not complicated and nearly identical to a 1970's Chevrolet. The charge lamp's voltage excites the field. Once it starts charging, positive voltage from the trio turns off the charge lamp and powers the field circuit. It should not be too difficult to determine what was wrong with it, or so I thought at the time.

It arrived a few days later and you could not tell that it had even been installed. On the test bench, it turned on the charge lamp when powered, which confirmed a complete field circuit. When I spun it the lamp went out but there was no output on the gauges and no noise beyond the bench's motor and belt. This alternator was inoperative and basically silent. It was as if there was no current going through the field yet the charge lamp circuit was working.

I disassembled it to test the individual components. What I found was that the rectifier was perfect with no leakage beyond the normal minimums. Both the rotor and stator passed every test. But the regulator was overcharging at 16 volts on the regulator tester which told me that the alternator should have been overcharging on the bench. This was not making any sense – an omen of things to come.

I ordered a new regulator to get it on the way and give myself some time to think. I rechecked all of the other components again. I have seen my fair share of poor B+ connections in reclaimed and seemingly perfect Mitsubishi rectifiers. But this brand new rectifier looked and tested OK, even running a load across the connection between the positive heat sink and the B+ stud on the rectifier. That eliminated the rectifier.



Figure 1 – Mitsubishi A3T08591, Lester 13460, used on Mazda RX7's from 1993-95.

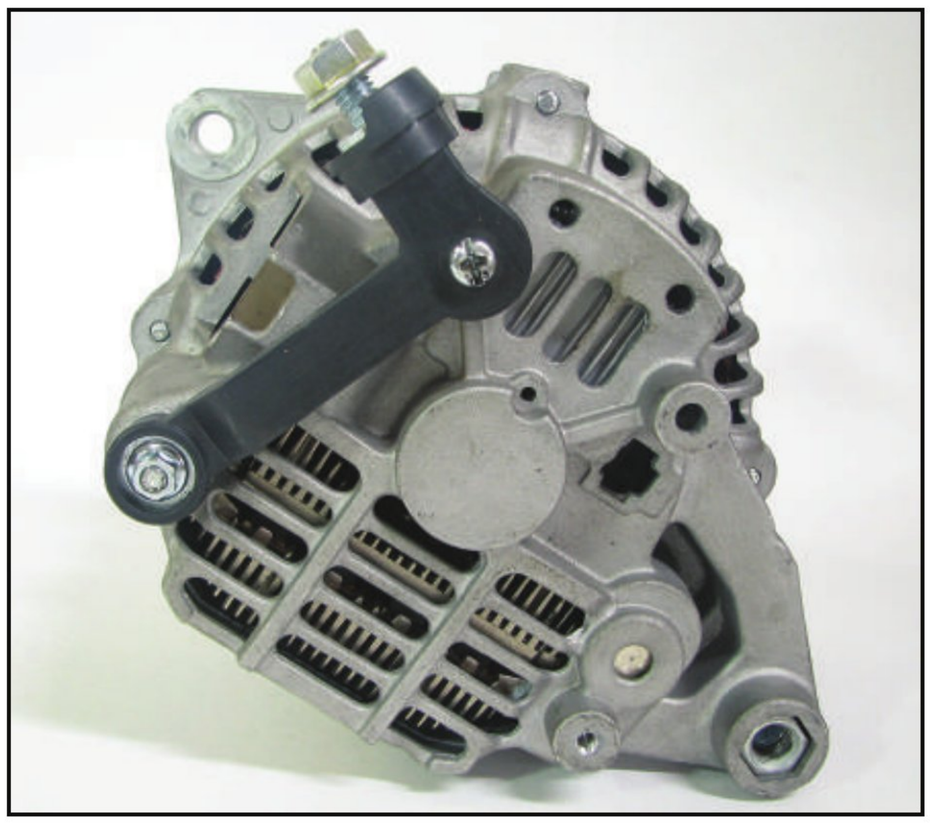


Figure 2 – It is a 100 amp alternator using plug code 300, the common S and L configuration.

The stator too passed a high voltage test for any shorts to ground. Loading the coils one by one proved that all three were in balance. Besides, I knew from experience that nearly any problem in a stator would have produced two things that this alternator had not shown – some kind of output and noise. There had been none of either whatsoever up to this point.

The rotor could have been going open at speed but that was unlikely and difficult to check. The key to solving this was going to be the regulator. Overcharging regulators, especially a brand new one, are rare. I would soon discover that this was not a voltage set point problem. On the regulator tester, it operated at 16 volts, which appeared to be about a volt and a half above normal. But when I tested the regulator using a modified 10SI with external connections to the brushes, stator and rectifier, (the 10SI's regulator and trio were removed), the

Mitsubishi regulator full fielded the test alternator, quickly pushing voltage over 18 on my test bench battery. It was then that I realized that the regulator tester had a 16 volt limit at the 12 volt setting. Clearly the problem regulator's power transistor was shorted or in other words, switched on permanently and charging full fielded.

I spent a few hours searching the internet for probable causes of that happening. Power transistors in voltage regulators usually fail by going open, unable to pass any field current. What I found, over and over again in multiple engineering forums was that the most probable cause was a high voltage transient. When a high voltage spike passes through a transistor, it damages the semi-conductor's p-n junction, creating a permanent path for current to flow. The transistor is then shorted permanently.

At that point I assumed that the transient damage had probably occurred on the RX7. Glen had called again, to tell me that his rebuilt alternator had been returned too, which seemed to confirm that line of thinking. The new regulator arrived and I installed it, confident that the real problem was in the car, not the alternator. But when I tested the alternator again, instead of performing perfectly as I anticipated, it did exactly the same thing. It produced zero output and made no noise whatsoever. Could I be back to square one again? Once the alternator was apart, I discovered that the power transistor in the second regulator was short-circuited just like the first, while the RX7 was over 300 miles away. The cause of the voltage spike was clearly NOT the car!

Determined to get to the bottom of this one way or another, I gutted one of the shorted regulators and soldered 18 gauge wires to both brushes, red for the trio (positive) brush and green for the field (negative) control brush. Then I ran those wires through air vents in the housing and reassembled the alternator. This would enable me to verify trio output or circumvent it if needed by jumping directly to B+. I wanted to use a robust regulator for this test, so I chose a heavy duty 22SI. Adding studs to the terminals made it easy to connect the leads (*see Figure 3*). But when I operated it that way, the result was exactly the same.

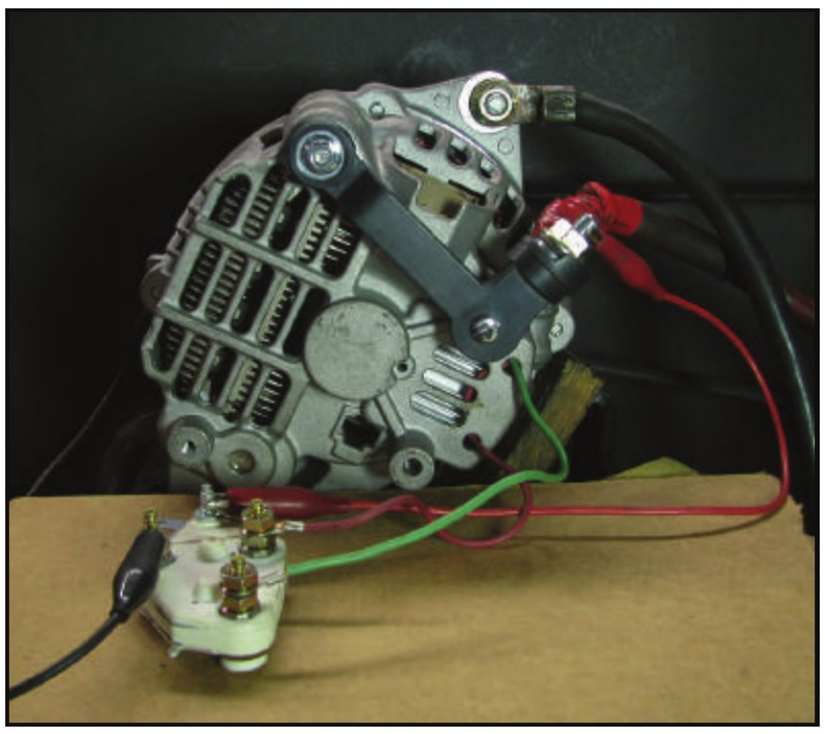


Figure 3 – Testing the alternator, regulator disabled, using a 22SI regulator connected directly to the brushes.



I now had three voltage regulators with shorted power transistors. That is when I disconnected the 22SI regulator and used the brush wires to full field the rotor by supplying it with B+ while grounding the green wire. My test bench ammeter showed a discharge of six amps, confirming the rotor was full-fielded and magnetized. Yet there was still no output or any additional noise. It was as if the B+ terminal was not connected to a battery – but it was. Could the B+ extender be open? To test that, I connected it in series between a working 10SI and the battery. The 10SI charged perfectly on the bench. With 60 amps running through the extender, the drop was an insignificant four one-hundredths of a volt (*see Figure 4*).



Figure 4 – Here we are measuring the B+ Extender's voltage drop while passing 60 amps through it.

Out of ideas, I sent an email to Gene Kaiser at Regitar, to explain the problem, the testing and confirm that a large spike in voltage was causing the power transistors in these regulators to short. Gene called me later to verify what I had found online about transient voltage and the transistors. We talked for some time, trying to figure out the source of the spike.

Then he asked me the illuminating question. Did this alternator have a B+ extension, common on Mazda applications of that time period? I told him that it did, but that I had inspected and even tested the B+ extension. It is basically a solid piece of steel covered with insulating plastic where needed. Then he told me that years ago, he remembered hearing something about extensions on some aftermarket alternators not making a good connection to the rectifier's B+ stud. I told him that the fit was extremely tight, in fact, so tight it had to be pried upon to get it off. Then he asked me if the metal was tight or the insulator was tight?

The problem, as Gene remembered it, had to do with the plastic insulation being too tight to allow good metal to metal contact. You would think that the nut would provide enough contact surface if that were so. But only another test of the alternator, without the extension, could prove if it was in fact causing all the grief.

I removed the B+ extension and reconnected the alternator using the rectifier's B+ stud while connecting the red and green leads to a good used 10SI regulator (*see Figure 5*). If it ruined another regulator, at least it would be a reclaimed one. But this time the alternator performed perfectly, easily producing 100 amps at 14.2 volts. The problem was obviously the extender as Gene suggested.

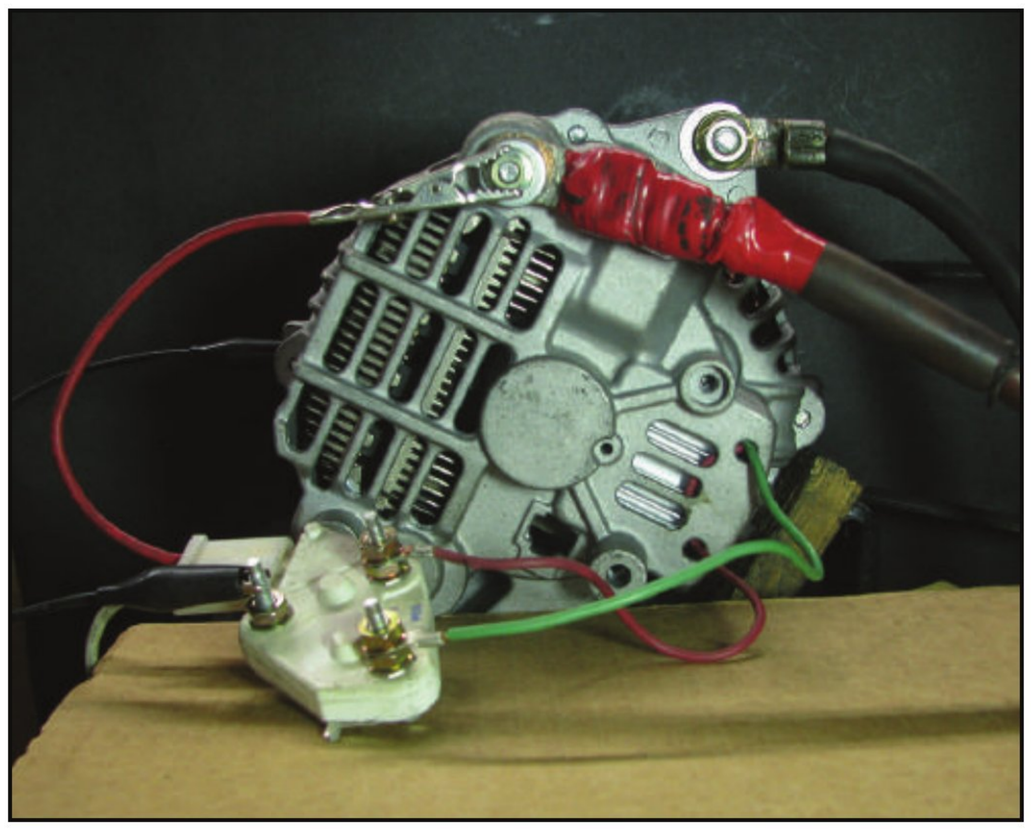


Figure 5 – Here we are testing the alternator with the B+ extender removed, using a 10SI regulator.

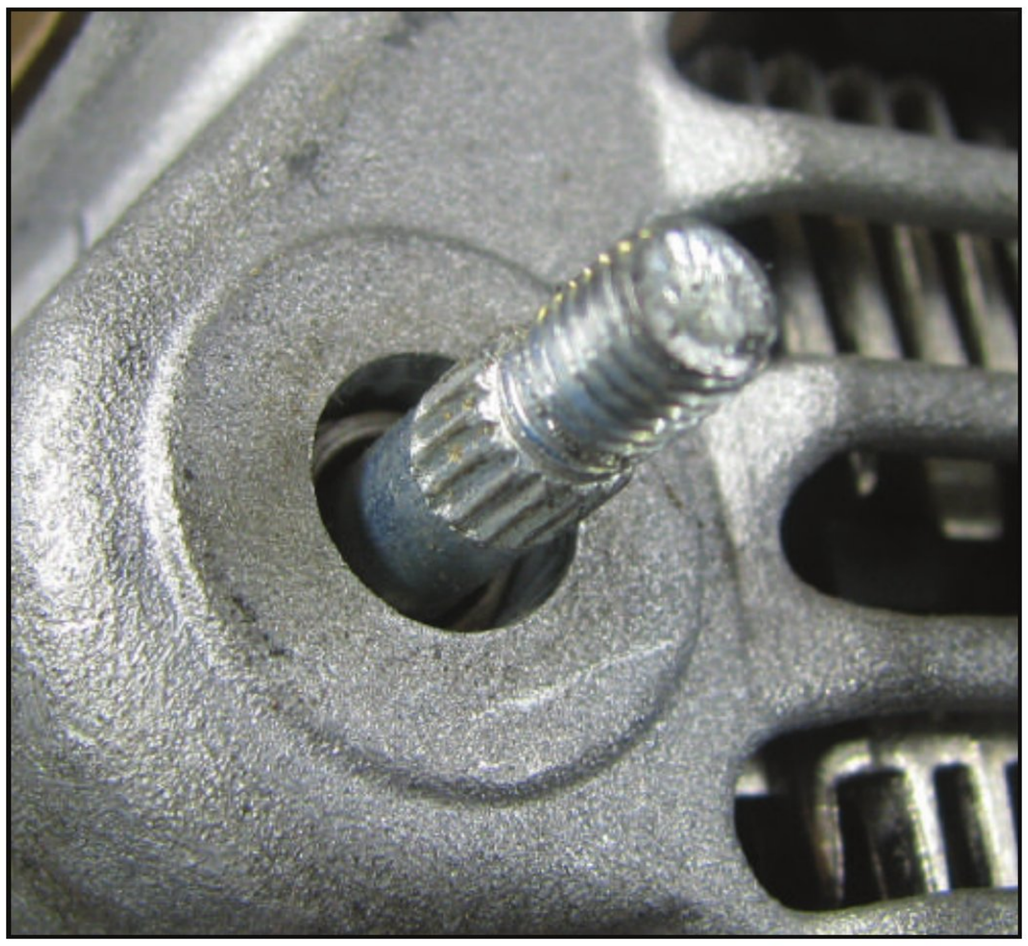


Figure 6 – This is a close up view of the rectifier's B+ post, which appears to be OK.

On a close inspection, the rectifier stud appeared to have little to no wear marks (*see Figure 6*) in spite of the fact that this alternator had been taken apart and put back together multiple times. To do that required removal of the extension, prying it off the stud each and every time.

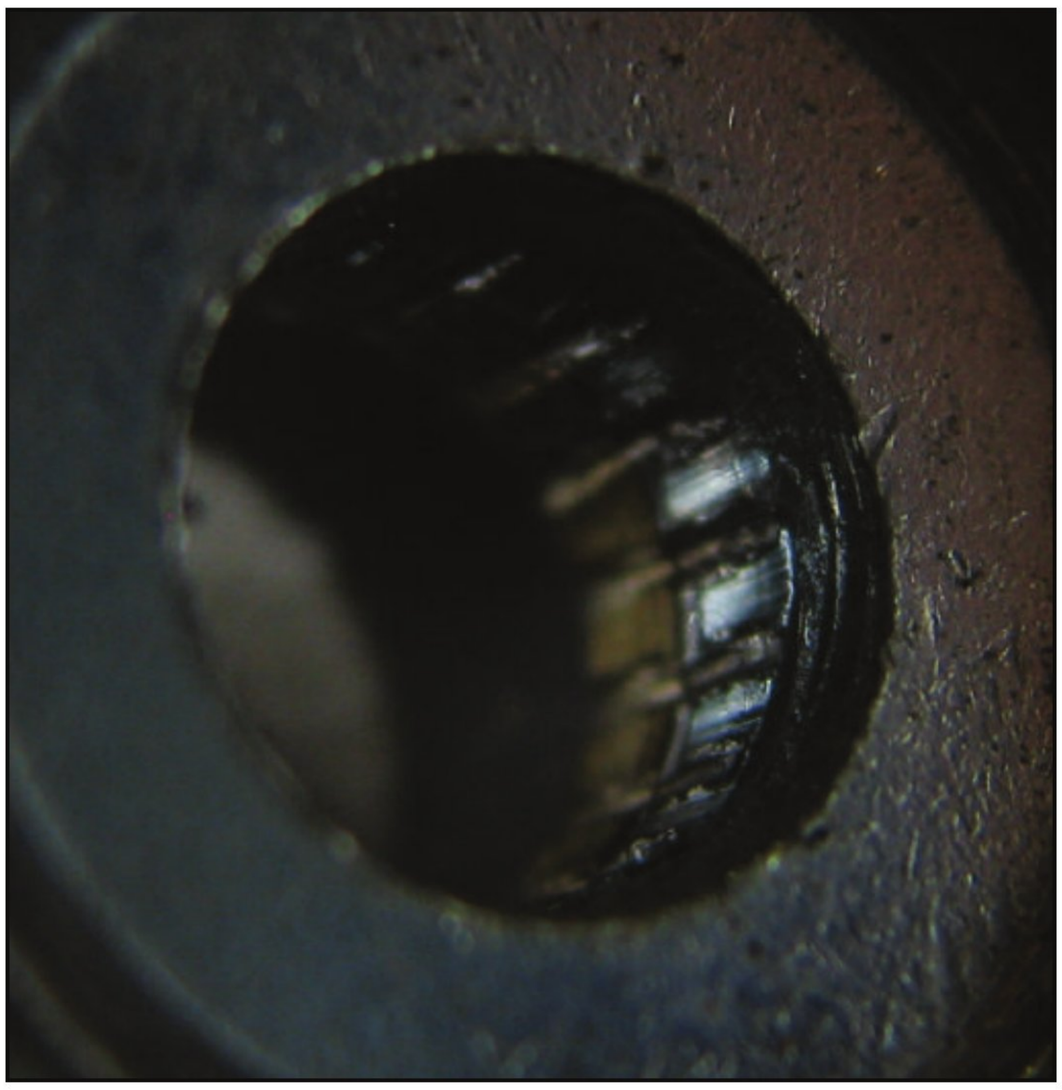


Figure 7 – Here is an inside view of the splines in the B+ extender. Note the wear marks, which only go part way.

The splines inside the extension did not look like they were making a perfect connection either (*see Figure 7*), but by sight, it does not seem to be enough to cause an open circuit. However, a close look at the bottom side of the insulator itself was especially revealing (*see Figure 8*). As you can see in the close up photo, the part of the insulator that fits into the housing's opening was too big in diameter and thus limited the depth of the extender on the rectifier's stud.

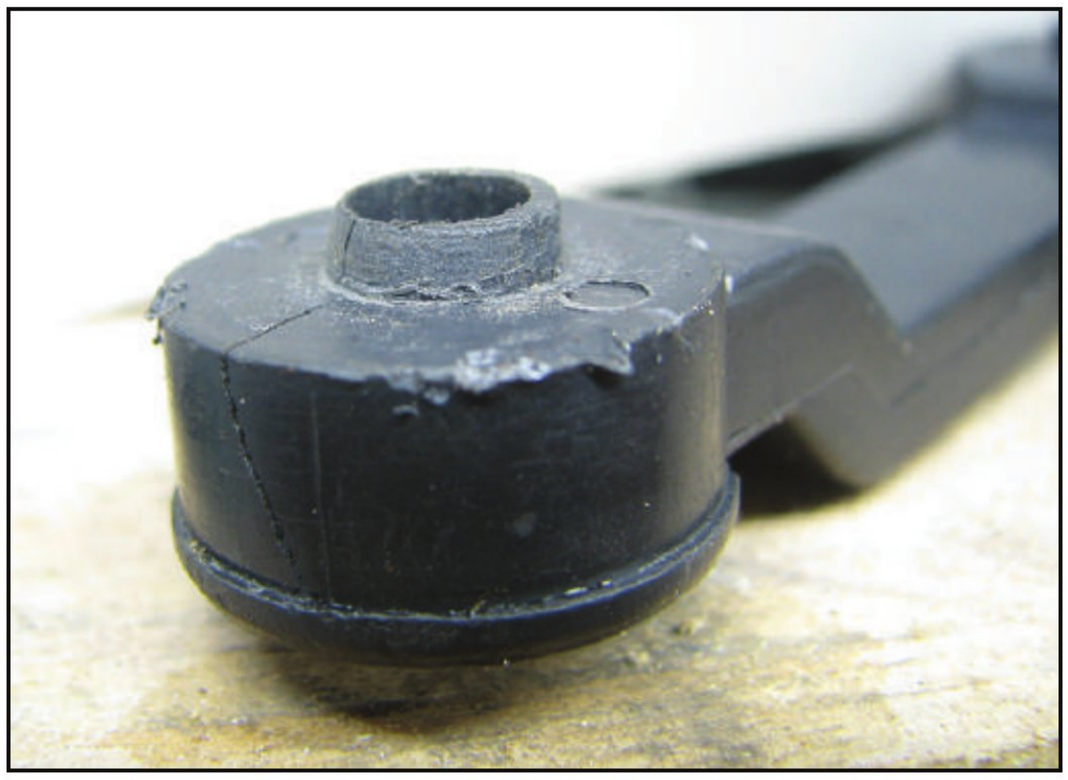
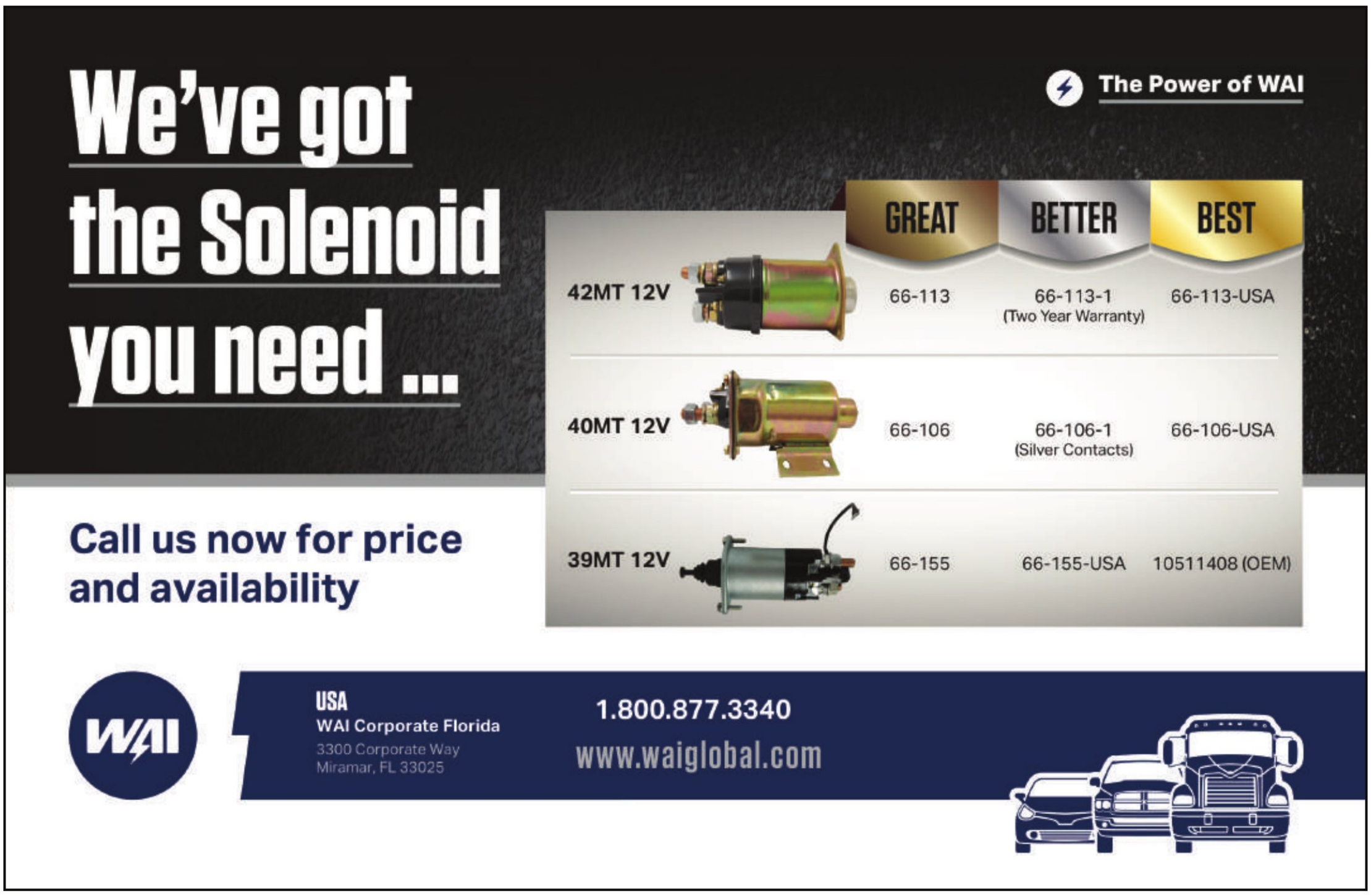


Figure 8 – This is a close up view of the B+ extender's insulator where it mates with the B+ stud through an opening in the housing.



To verify that, I removed the problem material from the insulator, and replaced it with a shortened piece of Motorola B+ insulator (*see Figure 9*). Then I reinstalled the extender. When I tightened it down, the nut was nearly four threads further down on the rectifier's B+ stud (*see Figure 10*)! For comparison, here's a close up of the nut's position as I received the alternator – or how it came out of the factory in China (*see Figure 11*). This alternator clearly created its own transient which destroyed a total of three voltage regulators almost instantly. Persistence paid off.

I have often questioned the test results that are packaged with new units, going back to when this practice began about 20 years ago. It was proclaimed to be "proof" that the unit had been tested and passed. This alternator, I was told, was packaged with test results, but they were discarded by the RX7 owner, so we will never know what was on that sheet of paper. But I seriously doubt that this alternator could have ever worked or if it was in fact ever really tested. I wonder how many more of these are out there, sitting on shelves, waiting for their turn to be installed.

Special thanks to Gene Kaiser at Regitar for sharing his experience and wisdom and Glen Mclaughlin for providing the subject alternator at entirely his own cost. This article would have been impossible without their help.

If you have an alternator, starter or generator that might make a good article, please give me a call or email me. Cell number is: 904-673-7301. Email address is: ere.bobt@gmail.com.





Figure 9 – You can see where we removed part of the insulator that was causing the interference.

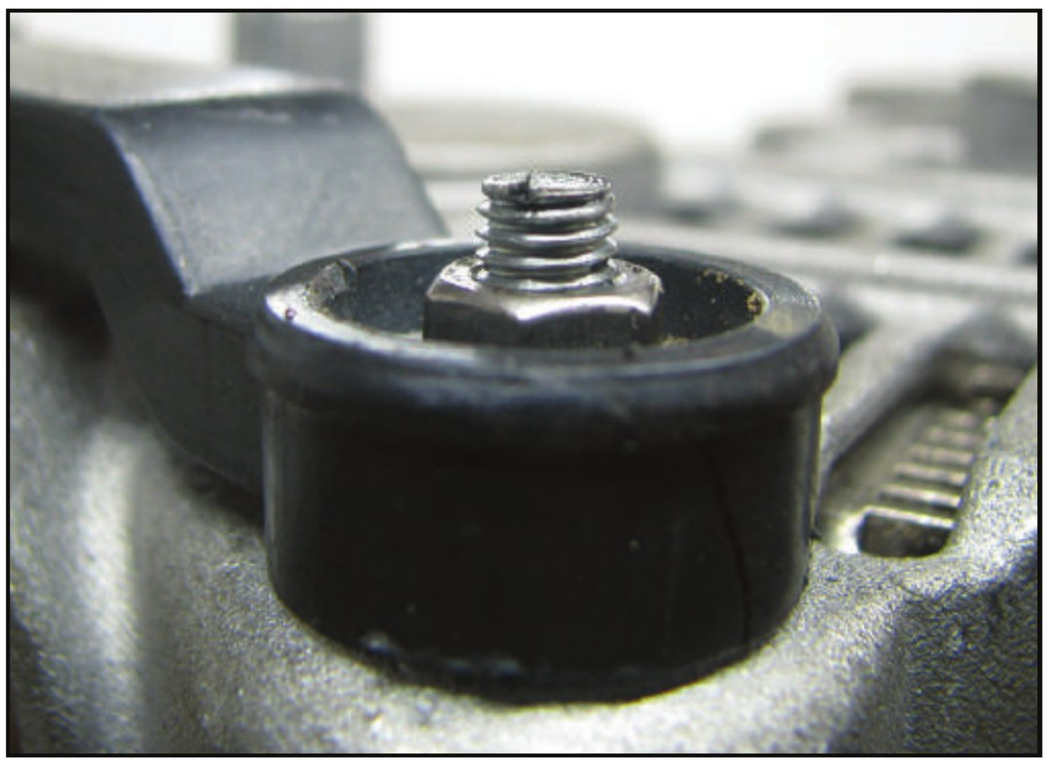


Figure 10 – This is the modified B+ extender mounted on the alternator. Note the number of threads above the nut.

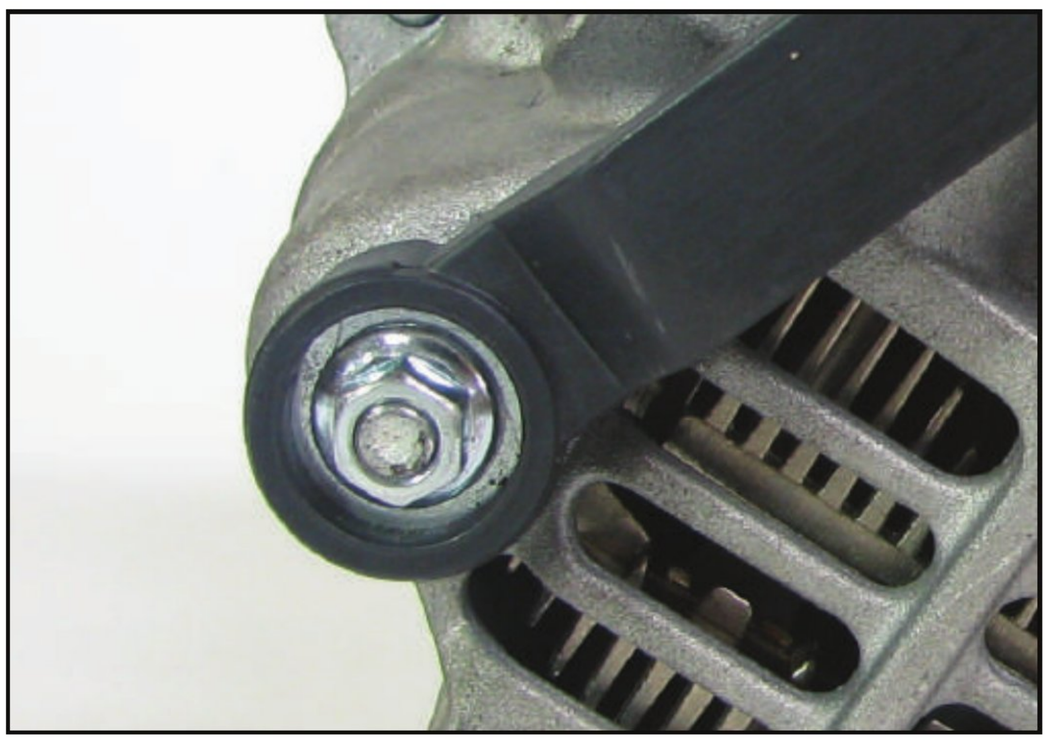


Figure 11 – Here we have the a close up view of that connection taken when the alternator arrived. Note that barely one thread was showing.

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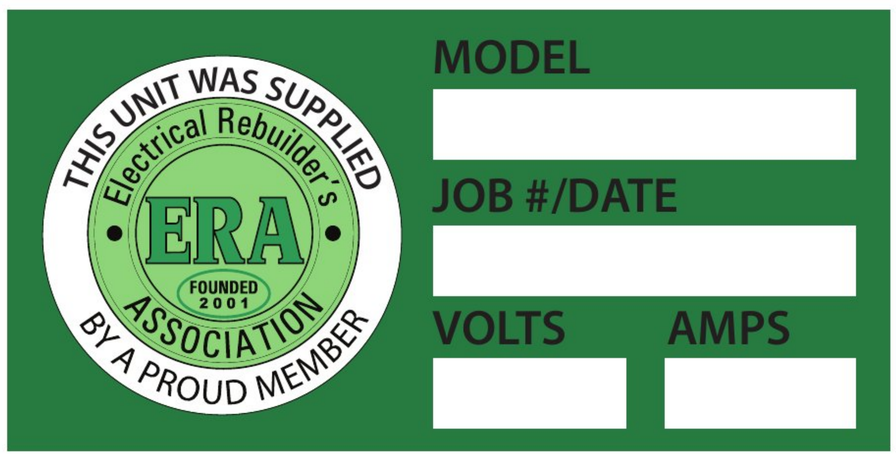
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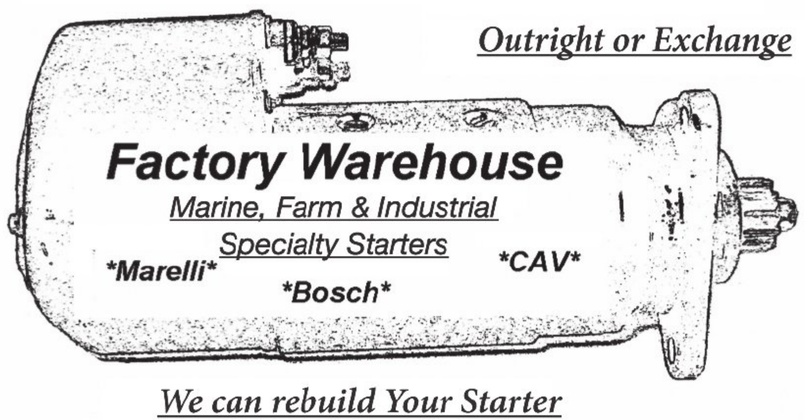
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