

Doing Business On and Off the Bench

COLUMN BY JOEY CLINE

Almost every industry in the U.S. has been affected by the recent economic situation. The rebuilding industry is no exception and perhaps has been plagued more than others due to high energy costs which include escalating gas prices. Due to the higher cost of driving, people are reluctant to go out more. People are buying less, which results in cutbacks of manufacturing and the need for transportation of goods. These and many other situations lessen the demand for rotating electrical units. So, what can one do to possibly work around these unavoidable problems?



Over the past several years, many rebuilders have seen their automotive unit sales decline or diminish altogether. To overcome this problem they have turned their focus to other areas in the rebuilding industry such as rebuilding agriculture and heavy duty units. While this has been a great footing, be warned that it may be sinking in the very near future.

This year has seen perhaps the two largest automotive remanufacturers with established and potent distribution chains gobble up many companies that will make them viable contenders for the agriculture and heavy duty markets. Every day that I walk through my shops looking at quality issues, I always have the attitude of what separates my product from everyone else's. Let's face it, in today's market one can buy rotating electrical units on about every corner.

Consider this challenge; make a list of every service and product that you offer to your potential customers. Now, mark off every service and product that can be performed or bought in a 20 mile radius of your business. What do you have left? Could your business survive off those things alone? One of the greatest ways to separate your business from others is to stay informed and continuously learn about your industry and the ever chang-

ing technology that surrounds it. After all, if you were the only one in the world that knew how to make a trillion dollars, then you would be the only trillionaire in the world!

Testing

November is a challenging time for a lot of technicians across the world. The National Institute for Automotive Service Excellence (ASE) offers its fall certification tests. This is a great opportunity for rebuilders to learn and show their true professionalism to the world. I have included an official ASE test question for those that would like to put on their thinking caps. Let's see how you do.

The horns in the circuit shown in (Figure 1) only blow when a jumper wire is connected between terminals no. 1 and no. 3 of the horn relay.

Technician A says that a bad horn relay could be the cause.

Technician B says that a ground in the circuit between the horn relay and the horn switch could be the cause.

Who is right?

- (A) A only
- (B) B only
- (C) Both A and B
- (D) Neither A nor B

Next month we will look at the correct answer to this question.

Too Many CCAs

Sometimes the information you come across leaves you wondering what the author is saying. Case in point: Delco Remy recently released instruction sheets 10511648 and 10511649. They are also considered as service bulletins 1B-216 and 1M-153. These bulletins are really nothing more than basic instruction sheets for the installation of the 28-, 29-, 38- and 39MT gear reduction heavy duty starting motors. The part of the bulletins that have left many in the industry scratching their heads is the wording, "Excessive available CCA can damage starters." CCA rating is the current a battery can supply at 0 degrees F (-18C). The following maximum battery recommendations are also given:

28MT	12V	1100 CCA
28MT	24V	900 CCA
29MT	12V	2500 CCA
29MT	24V	1250 CCA

38MT	12V	1875 CCA
38MT	24V	900 CCA
39MT	12V	2500 CCA
39MT	24V	1250 CCA

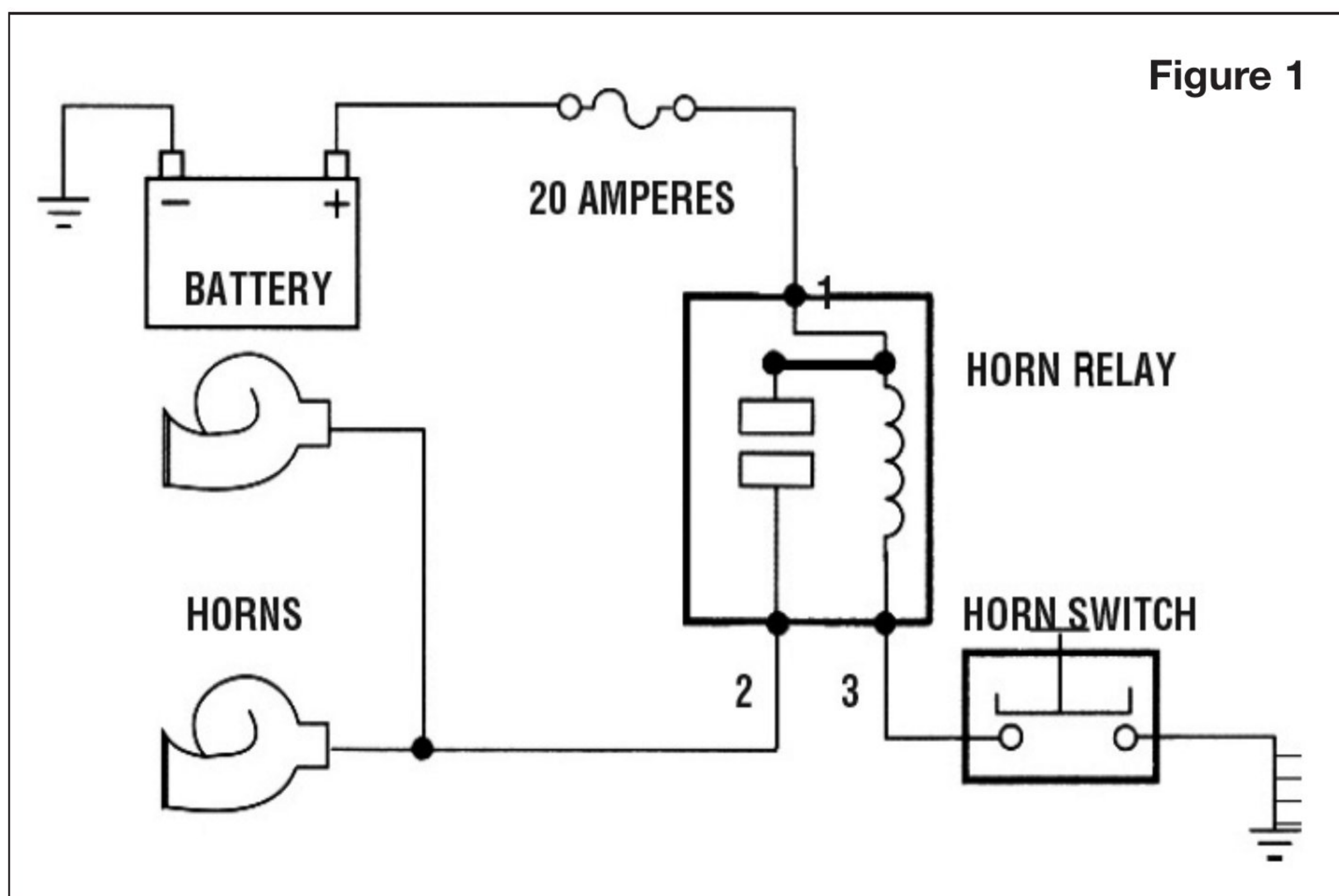
Most people in this industry have been taught, and believe, that you can never have too much battery power; that only the lack of battery power can cause problems. Although there are many who will never be convinced this is true, having more than the recommended battery CCAs available to the starter can or will damage it.

What will this excessive power do to the starter? Well, first let's think about something that you can relate it to in your shop instead of some scientific formula that leaves you scratching your head. Have you ever applied 12 volts to a 6-volt starter? It sounds like a top fuel dragster taking off compared to a Honda Accord. What I want you to think the most about though, is how fast and hard the starter drive engages.

How many times have you seen the damage to the drives, not to mention the flywheel, caused by this rapid engagement? In the illustration, the voltage was increased, causing rapid engagement. What I want you to see, not from an electrical viewpoint, but rather the mechanical view point, is the mechanical integrity of the starter being severely taxed by this rapid engagement. Impact loading of the starter drive and pinion gear to the flywheel, which can cause chipping, is what prompted Delco to make their comment concerning the excessive available power. OK, we now know the end result of having too much power. Now let's look at how adding extra batteries and/or upping the CCAs leads to this problem.

When a load (starter) is placed on a battery, due to the internal resistance of the battery, there will be a sag similar to a voltage drop in the voltage as it is delivered to the starter. Think of it this way: When you hit that starter button, a load is placed on the battery and is in affect waking it up. As the battery wakes up to supply the demand, its voltage will fall down and then ramp back up. All of this happens in a matter of milliseconds. This sag is what

Figure 1



delays the impact of the starter. When excessive CCAs are provided, even though the voltage remains the same, above the given recommendations, this sag or time delay is decreased causing a rapid engagement.

Still not convinced? Do this test: Go to your lawnmower, ATV and/or motorcycle, hit the starter button and listen to the starter engage and start to spin. Now hook up a good automotive battery using a set of jumper cables. Hit the starter button. Did you hear the difference? You still have the same voltage. All that changed was the available CCAs.

Have you ever raised the hood on a car and seen a massive capacitor staring at you? You know it has something to do with big stereo systems, but what? Kids may not know what starter impact means, but you can bet your life that when a big deep beat of their favorite song gets distorted they will find the problem and get it fixed. Their problem is the opposite of what a starter needs to prevent damage.

Remember the sag. It prevents the starter from being damaged but in the audio world causes distortion. The deep beats cause the stereo amplifier (load) to place a huge demand on the battery, which if you remember, has to wake up. By adding a capacitor, which has less internal resistance than a battery, the power is delivered in less time, preventing distortion.

Joey Cline is the owner of Alternator Starter Resource in Lenoir, N.C. He can be reached at (828) 754-8208 or via e-mail at asrjdcline@bellsouth.net.

E R E