WHAT TO LOOK FOR
IN AN ELECTRIC MOTOR
REPAIR SHOP

HECO
All systems go

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When an electric motor fails, a lot of things can happen. None of them good. At the best, it means a slowdown in production; at the worst, the entire line shuts down resulting in untold loses in time and money.

That's why it is so vital that you work with the right electric motor repair vendor. You need someone who can spot the problem and fix it promptly. Better yet, you need somebody who understands the entire powertrain system and can help prevent future breakdowns from occurring in the first place.

With so many electric motor repair sources to choose from, with most touting the same skills and services, how do you know which one to choose? That's the purpose of this eBook: to give you tips on finding a long-term repair partner who will help minimize downtime while maximizing your plant's performance.

Define the problem

The first step in selecting a motor repair vendor may seem obvious, but it's surprising how many people zip right by it. The fact that you're looking for a repair vendor means a problem has occurred. OK, what is it? What happened? Was it one major problem or a series of events?

Whatever your answer, are you sure?

More often than not, by the time you get to the point of looking for another vendor, there have been years and years of mishaps. It's usually a major disruption that is the straw that finally breaks the camel's back and causes an SOS to be sent out.

So the first thing to ask yourself is: has that problem occurred before; and if it has, has the same vendor been called on to repair it every time? If that's the case, maybe it's time for a change.

When the same vendor gets the job again and again, even failure after failure, it's time to admit that there has to be a better solution out there somewhere.

Now, we'll admit, that's easier said than done. Relationships come into play. So does the fact that many people just don't want the risk of making a change. In a twist of logic, it seems safer to stick with the devil you know rather than stick your neck out and go with somebody new.

But if you keep doing what you've done, you'll keep getting what you've got.

So it's time to….

Prepare specs

You wouldn't go to different car dealers and say, "quote me a car." You'd have to have some sort of specifications to get an accurate comparison between dealers. Same goes for electric motor repair. Specs level the playing field among vendors.

The only way for the vendor to give the best cost estimate (and best repair) is to first be provided with a detailed spec of what type of motors you have, what you need to have done, and what is going on in your facility.

Many companies generate their own specs, but if you haven't gotten that far, there are pre-established specifications available. Or you can hire a third party to generate custom specs for your particular needs.

Whatever the case, specs enable you to clearly communicate to the vendor, "if you're going to repair our motor, here's what you're going to do."

Here are some of the places where you can get specification standards that have already been set up by leading industrial groups and organizations:

- Electrical Apparatus Service Association "EASA AR 100-2015"
- Institute of Electrical and Electronic Engineers "IEEE"
- National Electrical Manufacturers Association "NEMA"
- Industrial Standards Organization "ISO"
- Northwest Indiana Business Roundtable "NWIBRT"
- Electric Power Research Institute "EPRI"

Prepare specs continued

You will also want to include the following in the specification request you give to prospective vendors. These are focused processes and reports you expect to be completed; you'll want the prospective shop to explain how they will undertake each point and how they will report the results:

- Electrical tests
- Vibration tests
- Mechanical measurements and tests
- Reporting documentation through pictures
- Hold points/inspections/ approval-needed portions
- Equipment calibration standards
- Approved methods of repair
- What should be tested when the motor comes in
- What should be tested before it goes out

When it comes to determining the specs, you can be generic or specific. The more specific you are, the less risk you run of getting an improper repair.

10 important questions to ask yourself

You've done your homework and put together a spec package that details your approved repair methods. But that's still no guarantee that you'll get what you want — and need. Here are some more questions to ask yourself before proceeding.

1 Are your specifications set up for short- or long-term fixes?

What is expedient may well not be what's best. You could save 20% on a repair now, but if the motor needs to be repaired again in two years, and the more expensive repair lasts 8 years, well, you do the math. The more you have invested in a motor, the more important it is that the repair specs are for long-term fixes.

2 Is a repair really less expensive than buying new?

Sometimes a motor isn't worth the time and money to repair. It's better to just replace it with a new one. Think of it like computer printers. You can repair one for $100 or buy a new one for $50. Make sure your vendor isn't inflating the price of a new one just to get the repair business.

3 Is your existing older motor better than an equivalent new motor

Manufacturing has changed from 10, 20 and 30 years ago. A thorough assessment needs to be performed to ensure which is the best choice. For larger motors you need to ask, "How long has this motor been in operation?" The older motors have more engineering overdesign and mass — and in many cases provide a better, longer-lasting solution.

10 important questions to ask yourself continued

4 Did you include lead-time as part of the spec?

Whoops, big mistake. If time is so critical, you don't need a spec, you need a magician. The vendor doesn't even know what is wrong with it yet — agreeing to a schedule without proper diagnosis would just be guesswork.

5 Is the repair method right for the entire system?

Many times when a motor breaks, it's not the motor's fault. Another malfunction somewhere in the powertrain resulted in the motor failure. The best vendors aren't interested simply in what needs to be fixed. They want to know why it failed in the first place.

6 Will the motor be inspected before it leaves the repair center?

Let's say you have a 4,000-volt motor being repaired. The vendor needs to run that motor at 4,000 volts before it leaves the shop or you're not getting a true test of the repair.

7 Does the vendor require specs before starting?

You'd be surprised at how often that doesn't happen, usually with not-so-good results. Some vendors don't believe they need specs from the customer. Their attitude is, "I'll just do it the way I always have." Then, when the motor fails again (and it will) nobody knows why because nobody knows what spec it was repaired to.

10 important questions to ask yourself continued

8 Does the vendor ask "why"?

You want a vendor that asks questions about the spec to be sure the spec is right to begin with. You want one who wants to know "why" a problem occurred, not just "what" you need to have done. You want one who brings new ideas and solutions to the table. If they agree with everything you say with no questions or suggestions, you may want to pull the plug now rather than later.

9 Can the vendor repair to the spec?

One of the first things in determining whether the vendor can actually do what they say is to have them fill out an audit form. This form should detail things such as what kind of equipment they have, who they subcontract to, and what their experience is in your industry.

10 Who owns the vendor?

Is the repair vendor owned by an individual, a family, or a private equity firm? Are the owners easily accessible? Do they "have skin in the game?" No matter whom you select, you may not be one of their biggest customers. But you want to feel like one of the most important.

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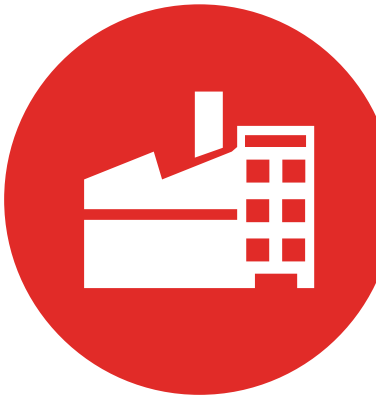
Form a team

When you form a team to review potential motor repair vendors, you will be assured that all bases are covered. Your team can include representatives from maintenance, reliability, purchasing, engineering and management.

It's only human nature for people to focus on the aspects of the situation that apply to them. So what is of utmost importance to one person is often of little or no importance to someone else.

By including representatives from a cross section of departments, there is a much better chance that all bases will be covered, and the specs will reflect the total scope of what is needed for a proper repair.

Visit the repair facility



Here's where the rubber really meets the road. The team should, without exception, visit the repair vendor's facility before making a final decision. This is the only true way to be sure that the vendor can do what they're claiming. Compare the audit form to what you're seeing, and don't leave until every team member has had their questions answered.

WHAT TO LOOK FOR IN AN ELECTRIC MOTOR REPAIR SHOP

Here's a place to start

From the time the first motor was invented, the electric motor sales and repair business has always been a "what" industry. Customers have been asked what they wanted to buy or have repaired. Then, they pretty much got what they had asked for. The problem was, they never knew what the problem was.

HECO is different

HECO is the industry's "why" company. We specialize in custom systems that optimize the performance of the entire electric motor-driven powertrain.

When you tell HECO you're having a motor problem, we want to find out why. Why did a failure occur? Why didn't you know about it ahead of time? Why is a new motor really needed? Why isn't the right spare on hand?

Then we use our problem solving and engineering expertise to keep your plant up and running.

To learn more about what our "All Systems Go" approach can mean to you, please contact:

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