



QUESTIONS YOU NEED TO ASK YOUR
ELECTRIC MOTOR REPAIR SHOP

Introduction

Whether your motors keep critical powertrains running or overhead cranes lifting, choosing an electric motor repair shop is one of the most important decisions you may have to make for your facility.

When a motor goes down, you've got to deal with expensive downtime and repair costs--even if you have a spare motor ready to drop in. If you don't have a spare motor ready, things are even worse.

But there's more to it than that. If your motors are repeatedly going down, you've got a bigger problem. A cycle of failure will impact your productivity, repair budget, and even your reputation.

Choosing the wrong repair shop, no matter how attractive their costs and lead time for repairs may be, will make you and your facility look bad. Deadlines may get missed. Lead times for your customers increase. Soon, it's not just your motors that seem unreliable but your entire facility as well.

The good news is that there are electric motor repair shops out there that will help you keep your motors running reliably. But before we talk about how to find a good repair shop, we need to discuss the difference between fast repairs and reliable repairs.

Fast Repairs vs Reliable Repairs

Every time your motor goes down, you're faced with a dilemma: Do I try for a fast repair or a quality repair?

Fast repairs may get you running faster, but they will not make your motor more reliable. Fast repair shops focus more on what failed than why it failed. Chances are that your motor will be down again with

If it was a bad bearing the first time, could that same bearing fail again because proper steps weren't taken during the root cause failure analysis, or root cause analysis wasn't done at all.

But, let's say you look for an electric motor repair shop that focuses on why something failed instead of what failed and addresses the root cause. Your motor is going to be more reliable. Before they replace that problematic bad bearing, they'll look at what caused it to fail. Once they find that out, they'll address that issue. And that brings an end to the cycle of failure.

Finding an electric motor shop that focuses on quality and reliability over speed will pay off.

The Importance of Asking Questions

When evaluating potential electric motor repair shops, you should start by asking some questions. The answers to these questions will help you determine not only which repair vendor is the best fit for your motor needs, but which one provides reliable repairs.



Can You Perform Repair and Rebuilds to My Specifications?

Here's something important to know: If a motor repair shop doesn't require (or at least ask for) specifications before they give a repair estimate, that is a red flag. It usually means they have their own way of doing repairs, and that is probably not a good thing.

You cannot get a good cost estimate from a motor repair shop without a detailed specification that includes information such as ...

- The type of motors you have
- What you need to have done to your motors
- The tests you expect to have performed and receive documentation for
- Approved methods of repair
- The equipment calibration standards they need to use
- Paint Color
- Long term storage preparation requirements

There are several organizations that have good specification standards you can use as a starting point if you do not already have specs on hand. These include IEEE (Institute of Electrical and Electronic Engineers), NEMA (National Electrical Manufacturers Association), and EASA (Electrical Apparatus Service Association) AR 100-2015. Many organizations find it most beneficial to have a custom specification written to their needs. A trusted partner in motor repair can write or assist in writing a specification that calls out unique requirements you may have. Examples may be: Epoxy paint for corrosive environments, specialty greases, bearing manufacturer preference, and shaft repair methods just to name a few.

Once you know what your specs are, it is a good idea to have your shop complete an audit form that details things like ...

- The equipment and facilities they have
- What experience do they have in your specific industry?
- Who do they subcontract repairs and rebuilds to?
- Is the facility climate controlled?

Have your specifications in hand before considering a motor repair shop.



What Types of Services Do You Offer?

A good motor repair shop will offer, at minimum, services such as ...

- Motor Repairs and Rewinds
- Electrical and Vibration Analysis
- Remanufacture/Redesign
- In House Balancing
- No Load & Full Load Dynamometer Testing
- PdMA (Predictive Maintenance) Motor Testing Service

Make sure they offer the services needed to keep your motor running at peak performance



Do You Have the Facilities and Equipment for My Largest Motors?

You might find an awesome motor repair vendor, but if you overlook this detail, it can be disastrous. When it comes to high voltage or ANEMA motors, you need to make sure a motor repair shop has the...

- Facilities large enough to work with your motors
- Equipment (e.g., baking ovens, vats) suitable for your motor size,
- Crane capacity so your motor is unloaded and handled safely
- Test equipment that can handle the voltages required to thoroughly test your motor

There are a couple of ways this could go wrong.

Without the right test equipment, you won't know if the motor is repaired properly until you install it. That could lead to sending it in for repair all over again, with expensive downtime and loss of production capabilities. Prior to receiving the motor back, a full report should be provided that will detail all the tests and repairs that were completed as well as a test run report that will highlight any issues with temperature, vibration, etc.

And if they insist that they can still take care of your motor even though they don't have what they need to maneuver, test, and repair it, that means they're probably planning to subcontract the repair out to someone else.

Make sure they have what they need to work on your largest motors.



Will My Motor Be Inspected Before It Is Returned?

Before a motor is returned to you, you have every right to expect the motor at the repair shop to and review a copy of those test results. The top repair shops will also offer witness testing in person or virtually to review the tests in real time or video-recorded.

Why is this important?

- Fixing one problem might cause another one to reveal itself, and without a final inspection you won't know until you reinstall it
- There's always a chance that something was missed during reassembly
- They can't really say they've met all your repair specifications without a final inspection

- You can't be sure the motor is completely fixed without that final inspection

All these reasons impact the reliability of your facility, as well.

A quality repair will stand up to a final inspection.



Do You Provide On-Site and Emergency Service?

Sometimes you need service on-site. Not all motors can be easily transported to a repair shop for repairs. Sometimes there are issues with your motor that simply must have a technician come on-site to observe, test, troubleshoot, and service.

And on-site services are important for another reason: there are times when a motor failure is caused by an issue in the powertrain. Having a technician come on-site to look at your motor in context can expedite the time it takes to get things running again.

In addition, motors always seem to fail at the worst possible times, and you cannot afford the downtime involved with waiting for your electric motor repair shop to resume its normal operating hours on weekdays.

Finding out if your motor repair shop offers both on-site service and 24-hour emergency service is extremely important



What Level of Industry Experience Does Your Staff Have?

Cutting-edge technology, the latest equipment, and the best test equipment on the market don't necessarily make for a good motor repair shop. If the engineers and technicians using that equipment don't have a combination of knowledge and experience, nothing else really matters.

For example, they may have the newest vibration equipment on the market but if their vibration analysts are not certified or barely have any real-world experience, they won't be able to tell the difference between a bearing that needs some grease and a motor that isn't fastened tightly to its base.

On the other hand, the latest technology combined with industry experience is a match made in heaven. Engineers and service technicians with experience and knowledge can get so much more out of the latest equipment. And this also shows that the repair shop isn't antiquated, clinging to old, outdated methods and tools when there are newer methods and tools that can get the job done better.

Make sure the motor repair shop you use has a service team that is strong on industry experience.



Are You an EASA Accredited Service Center?

A service center that is a member of EASA (Electrical Apparatus Service Association) has demonstrated that it follows industry best practices and consistently provides quality electromechanical repairs that either maintain or improve the efficiency and reliability of electric motors. Shops that are not only members of EASA but have taken the time and invested in becoming accredited show a much higher level of accountability to best practices. Receiving this accreditation is not an easy process and requires rigorous, independent third-party audits to maintain.

These audits scrutinize every step of the motor repair, remanufacture, and redesign. They are looking to see if the technicians and engineers are...

- *Using industry best practice*
- *Using calibrated equipment*
- *Following motor repair standards*
- *Practicing thorough documentation*
- *Maintaining a clean well-organized facility*
- *Looking for the root cause of failure*

So ... what does this mean to you and your motors?

EASA Accreditation means you can expect high-quality repairs that lead to reliable motor performance.

Hi-Speed Wants to be Your Motor Repair Shop

At Hi-Speed Industrial Service, we repair and rewind all types of motors, including AC/DC Motor & Generator, Synchronous, Slip Ring, Inverter, Hoist & Crane Duty, UL, Vertical Pump, Large Submersible, and Dry Type Transformer.

We are EASA Accredited, a TECO-Westinghouse and US/NIDEC master distributor, and the preferred vendor for numerous Fortune 500 companies.

We offer in-house and on-site services, including 24-hour emergency service, all performed by service techs with an average of 22 years of industry experience.

We offer climate-controlled motor storage with monthly testing to ensure your equipment is ready to go when you need it. For motors repaired by Hi-Speed, this can increase your warranty coverage as well.

When you send us your motor, we look for the root problem, address it, and get your motor back to you ASAP

And here is what we can do for you:

- Motor Repairs & Rewinds of All Types
- Power Transmission Repair
- Remanufacture/Redesign
- Electrical & Vibration Analysis
- Machine Shop/Fan Repair
- Core Testing
- Core repairs – Recoating and/or replacement
- Surge/Hi-Pot Testing
- In House Balancing ≤ 25,000 lbs

- No Load & Full Load Dynamometer Testing
- Full Machine Shop Testing
- Moisture Protection
- PdMA Motor Testing Service
- Motion Amplification
- Dry Ice Blasting
- Climate Controlled motor storage meeting OEM specifications