

10 Things To Consider Before You Bid A Motor Repair

When I first started repairing equipment I would invariably overlook some additional part of the job, that wasn't really part of the repair. Meaning that, not only did it take longer than I thought, but it was also much harder than a previous job that I had done a month before. I didn't understand why this happened and what made it different from the last repair, even though I replaced the same style of motor in the same style pump. This would predictably make me think that "even though I'm making \$95" I'm losing money, because it's taking longer than I thought.

As I've done more repairs over the years, I began to notice a number of things that made some jobs harder than others – again even though they were essentially the same job. The common factor in all of these repairs revolved around the work area.

Now many of you are more experienced than I am, and consequently may be able to look at a job and intuitively know what I've listed below, and be able to bid accordingly. But for me these were very hard and expensive lessons to learn. So in no particular order are the ten things that can make any simple motor repair a more time consuming and difficult job.

1. Do you have enough room to stand up straight or do you have to stay bent over?

For many practical and cosmetic reasons, homeowners have decided to "cover" the pump area. Cleverly, they think of all the wasted space (and additional cost) of making their cover high enough to stand up in – so they only make it one foot taller than the filter. Ugh! Think of the strain on your back if you have this situation and remember that no amount of money is worth a bad back. However, if you still need to do the work, bid high enough to cover the time you need to step out and stretch a few times, and enough to cover the cost of a good back support. I usually multiply my labor rate by about 1.5

2. Do you have enough room to put your feet directly under your body or do you have to lean way over to get access to the pump/motor?

For some reason plumbers like to put the pump most likely to fail in a spot between the heater, filter and the spa jet pump with the motor facing away from you. That usually means you can only put one foot near the pump while the other is placed four feet behind the area you're working in. A good back support really helps in situation, but I still often multiply my rate by about 1.3, if it's really a stretch.

3. Do you have to step over, around, or through other equipment or fenced in area to get to pump?

Even though you can get to the pump, and still be able to work on it, there is still a fairly circuitous route that needs to be taken to get to the equipment. I usually don't charge extra for this unless I have to do a hop, skip, and jump, then a twist to work on the pump. However, this can be easily overlooked at first glance – so pay attention. If it looks dicey, I'll multiply my rate by about 1.2 to cover those extra steps.

4. How close is the wall, fence, or shrubs to the equipment?

This often is a corollary to item 1. Never mind that the repair tech has to be a shape-shifter to get into the right spot, they also need to be a two-dimensional cartoon character to work on it. To me these are the worst. Either the landscaper or the builder manages to put a cement block wall, a fence, or thorny shrubs all around the equipment. While there have been cases where I did have enough room to get to and to work on the equipment more often than not, I'll end up with three-fingers of space between the back of the motor and the enclosure. Double ugh! There is no right way to bid these, sometimes you need to be really creative and in rare cases, I've had the homeowner remove a complete section of fence so I could work on the equipment. So multiply the normal labor rate bid on these by about 1.8 if it's a tight fit and you're going to repair something without having part of the enclosure removed.

5. Are there other pumps that are so close that you can't easily remove the motor that needs repairing?

Too many builders don't want to spend extra money making the equipment pad larger or adding an extra foot of plumbing to make the equipment spacing reasonable. Instead they manage to, as the saying goes, "manage to stuff ten pounds of equipment into a five pound bag." Unfortunately the homeowner has no clue of the potential repair problem, so you may need to explain why a problem exists. In an extreme case, I recently had to re-plumb an entire section of inlet and outlet pipe to move the pump so I could replace a pump motor, and then put it back in such a way so the next guy wouldn't have to do what I needed to do.

6. Are there any obstructions that could hinder motor removal and replacement, like plumbing or electrical conduits that run directly over, under, or so close to pump that you may wiggle, twist, or turn the motor to have to remove it? And do you have enough slack in the electrical connections to easily pull pump / motor from its normal location.

What looks reasonable may have some hidden "gotchas" once you start, so look closely at the surrounding plumbing and electrical layout. You need plumbing clearance not only to slide, lift back and lift out, but to tilt the motor enough to remove the wiring. Sometimes the plumbers lay pipe right behind the motor or in multiple pump layouts so there are several PVC "layers" right above a motor. Sometimes the conduit is just too short to give you enough slack to move the motor out and sometimes there are mechanical "tie downs" that need to be undone to provide enough slack in the conduit to get the motor out. While some of these are "normal" they can add extra time and energy to the job. So it's best to look closely, otherwise you'll be spending time you're not expecting and before you know it your one hour job has stretched into one and half. All because you needed to spend an extra five minutes here and there. I had a rude surprise once when I wasn't paying attention and didn't notice that the electricians had daisy chained multiple pumps together electrically using a junction box attached to the sides of each motor and of course these had no conduit slack. The extra time I had to spend disconnecting the junction boxes, cut my profit down to nothing. In cases where I'm

unsure, I sometimes give a range of labor costs to cover these situations. That way if it takes a shorter time, the customer is pleasantly surprised, but I'm still covered if something holds me up.

7. Be prepared to “wrassle” with pump hold-down screws, “wrench clearance,” and bonding wires

One of things that I most often overlook, because a motor replacement usually doesn't require it, is the removal of hold-down screws. Not only are they rusted and won't easily unscrew, I've sometimes had to chisel the heads off – a major hassle if you're not prepared. Also remember to look at how much wrench clearance you have. There's nothing like having to go back to your truck for a socket and ratchet, or worse an open end box wrench that you only can use for a quarter of a turn. And don't forget the bond wire removal. While it's easy to think you can just cut the bond wire and use a split-nut to splice to wires back together – remember you need some slack in the wire to do this. That often means loosening another connection on another pump (which can be just as much hassle as the original) and pulling it through so you can use that split-nut. (Yes you can splice in a short piece of wire, but that means you need TWO split-nuts!) Remember too, that if there is no bond wire, you need to put one in. All of this adds up to extra time you may have not have initially counted on, so look closely.

8. Once you remove the motor, do you have a reasonable work area to lay out and assemble the new parts before you place it back into the pump?

Putting in shaft seals is not particularly difficult, but it does require a certain amount of cleanliness. And putting on impellers, diffusers, and sealplates should all be done in an area that is easy to work in – away from the equipment pad. This means there is more to the job than taking the motor out and putting it back in. If you have to assemble it in an area that is more than a few feet from the pad, that increases your grunt and groan time. Hopefully, your labor bid covers that.

9. Does the homeowner use the pump area to store, stack, or save junk, and will they remove it before you work on it?

This is another corollary to items 1 and 4. The home owner inevitably thinks that all the extra space around (and in) the equipment area is a great place to put all those yard implements, toys, and spare building materials. I've worked around paint cans, roof tiles, kids bikes, bags of recycled bottles and cans, shovels, rakes, brooms, and too many pool toys to count. Don't think they will magically move themselves, all of these take time for you to move and you need a place to move them to. So either have the homeowner move that stuff or charge extra as part of the repair process.

10. How far do you have to park from the work area?

Lastly, remember that inevitably you're going to not only take that new motor to the equipment pad, but you're going to forget something from the truck. It's one thing to park twenty or thirty feet from the equipment pad, it's another thing entirely to walk a 200 foot driveway, up a set of stairs, and through a spring loaded gate with your hands full. While this doesn't rank up there with some other issues, remember those steps can quickly add up to another fifteen or twenty minutes. Make sure that you're covered for your time and energy.

So there you have it. I'm sure there's a few that I forgot, but the point is, you need to pay attention when you quote a job. Even those that seem so easy that you could do them in your sleep can come back to bite you in the pocket book. And two last things: you need to be able to explain these issues to the customer if they ask; and be mentally prepared to walk away from any job that can compromise your health and safety.



Reprinted from the March 2007 issue of the IPSSAN.