

The single biggest downtime issues for a hoist are the problems related to field voltage. Much time is spent on service calls that result due to low voltage. The basic reason for these problems is that the building line voltage is poor to begin with.

When we rent a swing stage and run several hundred feet of power cord out to the platform we make a poor voltage condition even worse. Voltage drop over the length of a given power cord is a constant and always occurs. Dealing with this voltage drop or line loss requires constant monitoring.

On the standard power cord being used in our industry (10/3 SO) you should expect to lose about 2 volts for every 100' of power cord that you use. If you yoke two hoists together from one supply power cord, you lose 4 volts for every 100' of cord.

Several options are available for overcoming or at least minimizing voltage drop related problems:

- Run separate electrical cords to each hoist.
- Increase the cross section of the power cord that you are using. Instead of using 10/3 SO you can use 8/3 SO.
- Install a booster transformer at the power source.

Although the first two solutions to overcome low voltage work, they are infrequently used as a stand-alone solution. Running separate electrical cords to each hoist requires that these cords be plugged into separate breakers as well. Finding more than one breaker circuit on an older building can be almost impossible when you rent 3 platforms on this site.

If you can overcome the breaker issue, you must now deal with the increased load being applied to platform. The weight of all items being lifted on a suspended platform must be calculated into the live loading formula; this includes the weight of the power cord as well. Attaching two power cords to a single platform increases the amount of load that a platform must lift; in most situations the number is doubled.

Increasing the cross section of a power cord means that you use a power cord with more copper inside of the conductor. When you go from 10/3 SO to 8/3 SO you have more copper inside of each copper conductor, which also means increased weight being applied to platform. You will have decreased the resistance in the cord, which decreases the actual voltage drop experienced by the platform. The increase in weight or loading goes up by about 7 pounds for every 100' feet.

The addition of a booster transformer to correct or minimize low voltage has fewer downsides to it. This is also the most popular approach being used nationally.

## Rent a Booster?

Although the addition of a booster transformer can help solve many downtime issues that are directly related to poor line voltage, it is not always used.

The two biggest objections to using a booster transformer are:

1. Extra equipment on the jobsite.
2. Extra cost to the rental.

Since swing stage rentals routinely involve many individual parts and pieces, this objection is usually minimal when it is explained that a transformer is only the addition of one more part.

Extra cost to the rental is the biggest of these objections. In a random survey of dealers that rent transformers with a platform, the average rental rate is \$25-\$30 a month extra for a booster transformer. Although this is not very much money, many customers will still object.

Whether or not your company charges for the rental on a booster should not be decided simply on cost and return. The loss of rental revenue for a transformer can be completely offset by the value of its use.

Supplying a transformer to your customer without charge can give you three distinct advantages.

1. Fewer Service Calls
2. Lower Repair Costs
3. Greater Customer Satisfaction

## Fewer Service Calls

Everyone can agree that the fewest number of service calls, the better. When the voltage being supplied to the hoist is within its normal operating range, the hoist runs more efficiently with less downtime.

The cost of service calls adds up quickly. Even if the job site is within ten miles of your shop, it can take as much as 1-1/2 hours worth of mechanic time away from other projects. This time is composed from 1/2 hour of travel time each direction and 1/2 hour on site repair time. Sometimes the on site repair time could take longer if the damage is not readily visible. Some shops try to minimize this time by swapping out a hoist with a newly serviced unit. This still takes about 1-1/2 hours.

## Less Repair Costs

The most frequently damaged part due to low voltage is the start capacitor, and its cost exceeds the average rental revenue of a booster transformer. Unless customers are bringing in their own hoist, the cost to replace a start capacitor is generally not passed along.

The damage from low voltage is cumulative and builds over a period of time. Much of this damage does not show up immediately, therefore the costs are not readily visible. The damages from long periods of abuse from low voltage show up as shorter life spans in all electrical parts including the motor itself.

It should be obvious that the greater the damage, the longer it takes to repair. Time is money and more time increases your costs.

## Greater Customer Satisfaction

The fewer number of service calls, the higher your customer's satisfaction will be with the equipment that you rented them. Whatever the reason is for downtime, it matters very little to the customer. They see time as money and downtime is a cost with no production.

## Tips and Tricks

- Create a service call log for all occurrences and you will find some very useful information about downtime.

For questions or comments, contact Customer Service at 1-800-560-CLIMB (2546) or [customerservice@safeworks.com](mailto:customerservice@safeworks.com).