

# Troubleshooting Help

Spider encourages you to consult your Operators Manuals for specific products in your fleet, but here is a general Question & Answer guide to troubleshoot hoist performance issues. And as always, contact your Spider professional at 877-774-3370 as needed.

## How do I correct low voltage?

- First you can't fix what you don't measure. Use your meter correctly to get a run voltage reading and ensure the source is consistently delivering voltage in the rated range.
- Understand that you will lose 2 volts for every 100 ft of 10/3 cord and 4 volts per 100 ft of 10/3 if you are using a yoke.
- Run separate electrical cords to each hoist and plug the cords into separate breakers. Understand that running 2 electric cords increases the load the platform is carrying.
- Increase the cross section of the power cord that you are using. Instead of using 10/3 SO you can use 8/3 SO. Understand that doing this increases the cord weight from 33 lb per 100 ft of cord length to 41 lb per 100 ft, which reduces the platform loading accordingly.
- Install a booster transformer at the power source, especially if the building is prone to fluctuations in voltage during the day, such as when office equipment and air conditioners kick in later in the day.

## What is the longest electric cord I can run to 2 yoked SC1000/SC1500 hoists?

The answer depends on what the electric cord is plugged into. Operating 2 hoists on a yoke attached to 10/3 electric cord will see a voltage drop of 4 volts/100 ft of electric cord. If the source run voltage is 208V, the minimum run voltage at the hoists is 176V. With 1000 lb of load at 208 run volts, an operator can operate with 775 ft of 10/3 electric cord attached to the hoist yoke.

## What is the longest electric cord I can run to 2 yoked Zmac/1000® or SC40 hoists?

The 10/3 electric cord attached to yoked Zmac/1000® at the 208 VAC will be 500 ft. The longest 10/3 electric cord attached to yoked SC40s at the 220 VAC will be 600 ft.

## Where is the best place to use a buck/boost transformer?

### At the platform? At the power source?

A buck/boost transformer corrects on-site voltage conditions before they affect the performance of attached equipment. To "buck" voltage, the voltage is being lowered or decreased in amount. To "boost" voltage, the voltage is being raised. Boosting voltage is the most common reason to use transformers in our industry. The best place to use a buck/boost transformer is an installation as close to the power source as possible to maximize the benefits.

## How much overloading does it take to affect the hoist's performance?

No amount of overloading is ever acceptable. Remember that the rigging device, counterweight calculation, tiebacks, attachment

structure and wire ropes have been sized to handle 4 times the rated load of the hoist. Thoughtlessly adding another bucket of paint or concrete or another panel of glass to "save a trip" quickly adds up to downtime and potential risk to the operator. Increasing a 1000 lb hoist's load by just 15% or 150 lb requires rigging for another 600 lb of moment load. This may exceed the capability of your rigging device or other components of the system. Overloading the hoist by 15% moves the bottom end of the run voltage operating range by 20 volts or more depending on the hoist. Moving to 1500 lb hoists or installing optional overloads to limit hoist travel can mitigate this abuse.

## How do I correct overloaded platforms?

- Use the weights in this catalog to calculate the entire weight of the platform, tools, your workers at 250 lb (113.4 kg) each and all the materials on the stage. The hoists lift the entire weight of everything below the shackle of your rigging device. This means the entire wire rope and electric cord length, the yokes, the hoists, platforms, all accessories (i.e. wall rollers, welding grounds), the workers and their materials. Among the most commonly forgotten weights to calculate in the stage: 5/16" IWRC wire rope weighs 18 lb/100 ft of wire rope and 10/3 electric cord weighs 33 lb/100 ft.
- Train operators to regularly clear platforms of debris.
- Encourage the use of material hoists for moving materials to the working level.
- Encourage the use of 1500 lb hoists when there is a likelihood of overloading.

## What is the right size generator to use?

For each hoist run from one generator you need 5,000 watts. Running 2 hoists from one generator requires a generator able to produce at least 10,000 watts or 10kW. Whether you rent the generator or not, train the operator on using it. Set the voltage on the generator. Use a marker to locate where the needle on the meter should be at all times during normal operation. Then instruct the operators how to use all the equipment that has been supplied to them. For more info, see Spider's Generator Guidelines 705997-1.

## What voltage should I have in order to operate my SC1000/SC1500 hoist most efficiently?

The SC1000/SC1500 hoist is designed to operate efficiently when the run voltage is at +10%/-15% of the nameplate rating. If you are running a 208V SC1000/SC1500 hoist, your running voltage range would be between 176.8 VAC and 229 VAC.

## What voltage should I have in order to operate my Zmac/SC40 hoists most efficiently?

The Zmac/1000® operates between 188 VAC and 228 VAC but the optimal voltage is 208 VAC. The SC40 operates between 198 VAC and 242 VAC but the optimal voltage is 220 VAC. Both hoists are +/- 10%.