Troubleshooting:

WAIT....

<u>DON'T</u> yank that motor out just yet!

Save time, effort and money...

A few simple checks can verify that the problem lies with the Servo motor and not elsewhere.

• Reset Drive.

- Check for secure cable connections at both ends.
- Inspect cable for physical damage.
- Check cable connectors for physical impurities.
- Use a megohmeter and check cables to ground.
- Does the shaft spin freely (without brake)?
- Check auxiliary feedback devices (encoder, resolver, glass-scale) for following error.
- Check over-travel sensors & light switches for wear, blockage or defects.
- Swap motor or drive with another working unit.

"Is it the Problem or just another part of the puzzle??"



KJ Electric 5 Locations Across New York State!

Albany, Binghamton, Buffalo, Rochester and Corporate Headquarters in Syracuse, NY



KJ Servo Repair Lab 5894 East Molloy Road Syracuse, NY 13211 Phone: 315-454-5535 Fax: 315-454-8418

Servo & Spindle Motors:

A practical guide to troubleshooting & replacement in the field.



PRESENTED BY:



ALBANY • BINGHAMTON • BUFFALO ROCHESTER • SYRACUSE

Quality Repairs Quality Repairs

What goes into a servo or spindle repair is directly related to what you will get out of it... KJ Electric offers the highest quality repairs,

- following the process listed below:
 Complete mechanical and electrical inspection
- Windings are surge tested to 2000 volts.
- Encoders thoroughly tested for count and
- Electrically load test encoder lamp.
- aggressive cleaning system. • Environmental impurities are removed with an
- גפאןמכפּן אוִנָּץ טפּא אמגזי. • פּפעווטלז מען זפּמןז מגפ טפּאפּג גפ-חזפּק מןאסאז
- Worn and damaged O-Rings are replaced.
- All feedback devices (RPD's, Resolvers, Encoders) are precision aligned with appropriate test equipment.
- Back EMF is verified to factory specifications.
- Spindle rotors are dynamically balanced to meet or exceed GM VI vibration specifications.



Offering Quick Turnaround Times!

۸۳۵۴'s IP מאעמץ؟ ۳۵۵٫ IP68...

IP Stands for "International Environmental Protection Level" and basically tells how well a motor is environmentally sealed, similar to NEMA enclosure ratings. The first digit is the protection from dust, and the second digit is the protection from liquids. The higher the number, the better the protection. See chart below...

א First Digit "Protection מקמוחst solids" וף First

Totally protected against dust	9
Protected against dust, limited entrance	S
Protection against objects to 1 mm (small wires)	4
Protection against objects to 2.5mm (small tools)	٤
Protection against objects to 12mm (fingers)	7
Protection against objects to 50mm(hands)	l
No Protection	0

"sbiupiJ teningA notection Against Liquids"

	1
Protected against immersion under pressure	8
Protected against immersion up to 1 meter	Z
Protected against strong pressure jets	9
Protected against low pressure jets	S
Protected against spray from all directions	4
Protected against direct sprays 60° angle	3
Protected against direct sprays ٦5° angle	7
Protected against trailed arops	L
No Protection	0

The biggest problem with the IP rating system is that it rates protection from harmful effects, but define harmful. Manufacturers often define harmful as electrical shock to persons in contact with the motor, rather than malfunctioning of the unit. So just because the nameplate reads IP68, that doesn't mean you can let it sit under 18" if coolant and expect it to run.

səlbniq2 , sour Equip

It may surprise you to know that 12% of all servo and spindle motors received test electronically and mechanically okay. With the increasing complexity of automated systems, it's no surprise that diagnosing a motor poses or mmerous challenges.





ment. Coolant, iubricant, metal chips, vibrating equipment... causing loose and grounded cables, flooded windings, garbled data, as well as broken and misaligned feedback devices.

It's true that installing IP-68 rated motors



reduces environmental problems and failures, but it's not a license to leave splash guards off, and let coolant submerge the motor.

While it's beyond this brochure to look into drive controller issues, it has been our experience that a few quick checks of the motor, cables, and surrounding equipment before pulling and sending a motor out for repair is well worth the effort, and saves time and frustration.