



Flood-Damaged CNC Equipment Recovery Guidelines

Draining/Removal from Machine

***Note:** If you require on-site assistance, please contact Tri Star CNC Services to recommend a local, trained technician to aid in component removal.

Control Cabinet: Allow submerged control cabinet to drain before opening, to mitigate the risk of injury. However, if it's possible to safely access the cabinet for drainage, doing so as soon as possible, reduces the exposure of your electrical components to contaminants, increasing the likelihood of a successful recovery.

Batteries: Remove any batteries from control/drive units. Shorted batteries from water exposure can irreparably damage the internal circuitry of your electrical equipment. Contact the machine tool builder to retrieve any lost data if a local backup doesn't exist.

Cabling: Remove all connected cabling from control cabinet and electric motors. Cable connectors tend to gather and hold moisture; disassemble and clean connectors with a nylon (non-abrasive) brush, and hang cabling vertically. Doing so will allow any liquid to freely drain from the assembly during drying.

Servo/Spindle Motors: Servo and spindle motors should be disassembled by a trained technician if you suspect they've been exposed to water.

Cleaning Component Guidelines

5. Motor Drive units should NOT be submerged during cleaning. Alternatively, use flowing water to remove any contaminates.
6. Transformer coils cannot be internally cleaned. Clean the outside of the transformer and electrical terminals as best you can.
7. Enclosed relays should be opened and cleaned. If the design doesn't allow for this, they will need to be replaced.
8. Clean electronics using a nylon (non-abrasive) brush with a non-corrosive, multipurpose detergent. This applies to drive units, power supplies, and control circuitry. Make sure to focus on removing contaminates from connectors and sockets.

Drying Water-damaged Unit Guidelines:

***Note: All units should be thoroughly dried before applying power. Dry times are a function of temperature, ventilation, and component design. Below are some examples of typical dry times by component type.**

Servo Transformers: 8 hour dry time at 240 degrees F

Servo Motors: 12 hour dry time at 170 degrees F (encoder removed)

PCB's: 2-4 hours at 140 degrees F

Verifying Insulation Resistance

Transformers: Use a 500V Megohmmeter, measuring coil-to-coil & coil-to-core. 10 Megohms or higher is a safe target resistance.

Servo/Spindle Motors: Use a 500V Megohmmeter to measure resistance from the motor winding to ground. 10 Megohms or higher is a safe target resistance.

Verifying Functionality

After the insulation integrity of your equipment is verified as meeting the recommended readings, reconnect cabling/connectors to units and apply power.

How Tri Star CNC Services can Help

Tri Star CNC Provides a thorough and safe cleaning & testing service, mitigating future corrosion and the chance of damage when power is applied. We want to ensure you're back up and running quickly, while mitigating losses to flood-damage.

***For all storm-affected areas, we are offering our cleaning, testing, and repair services at a discounted rate until the end of the 2017 calendar year. At that time, we will reassess the need for these discounted services to our fellow American in Texas, and determine whether to extend them into 2018.**

Discounted Rate Table (applies to "clean & test" AND "repair" services)

# of Units	Discount
1-4	5%
5-9	10%
10-19	15%
20+	20%

For any technical questions, concerns, and/or inquiries please contact Tri Star CNC Services at: 815-578-9145 or visit us on the web at www.tristarcnc.com