



## **WARNING, WELDING ON MCG EQUIPMENT:**

**Many of our units today are equipped with sensitive electronic components that could become damaged if proper welding safe guards are not adhered to!**

**Before welding on any Grove / GMK /Manitowoc / National or Potain units, the following precautions shall be taken to protect electronic components.**

1. Obtain factory approval before performing any welding.
2. Stop the engines, disconnect all positive (+) and negative (-) battery cables from the batteries or use the battery disconnects if so equipped.
3. Disconnect electronic components that have wires connected to ground. Disconnect all the transducers from the boom lift cylinders.
4. Do not attach welding cables to or near any electronic components. If welding is required near any electronic components, the component should be removed from the unit during the welding and reinstalled after the welding is completed.
5. Attach welding ground cables as near as possible to the area being welding. Do not bridge electrical components.
6. Cover electronic components as required during welding to protect them from welding sparks and spawls.

Also, additional precautions must be observed on any engines equipped with electronic control modules for engine management. To protect the control unit, **it is mandatory to remove all connectors going to the ECM!** Many units have transmissions that are controlled by an electronic control unit and **it is mandatory to remove the connector plug before any welding is attempted!**

To protect the PAT LMI system from damage, **it is mandatory to remove the power supply and ground wires from the PAT system.** Disconnect the positive (+) and negative (-) power supply wires inside the central unit. On all GMK units, **it is mandatory to disconnect the cables and remove the central unit from the dash and the (3) EST units behind the seat in the operators cab! It is also mandatory to disconnect the transmission ECU and the ESX for the separate steering if the unit is so equipped!**

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