Due Date : 2/21/20

ENGR262 Lab – Tours

Name: Sean Lai

Tour Site: Biotronix/Micro Systems Engineering

Tour Guide First Name: Brian

1. What type of work does the company do? Include both area of manufacturing (machine shop, casting factory, foundry) and industry sector (aerospace, defense, healthcare, microelectronics)

Biotronix manufactures pacemakers, defibrillators, and other medical devices. MSEI is the division of biotronix that manufactures the electronic components for those medical devices before shipping them elsewhere to by assembled into final products. MSEI assembles, solders, and tests the electronic equipment.

2. Who are the customers that this company serves?

Biotronix immediate customers are medical professionals who implant their devices into patients in need. The patients served by their devices include those with heart conditions requiring a pacemaker or defibrillator, those in need of hearing enchancement, and many other medical conditions.

3. What manufacturing techniques does the company employ?

MSEI uses SMT (Surface mount technology) to manufacture the integrated circuitry of the biotronix devices. They control every step of the process: applying solder paste, placing components, reflowing the solder in an oven, and extensive testing of components and device before and after assembly. MSEI uses automated processes for much of the assembly and testing process

4. What are some examples of finished products?

Biotronix has made pacemakers for 50 years and today makes defibrillators, cochlear implants, devices to assist with urinary function of the body, and many others. For MSEI a “finished product” is a completed and tested circuit board assembly ready to be shipped to Germany for assembly into the final medical device

Remember to save as a .pdf and upload a pdf to D2L within one week of the tour

5. What is something you learned on the tour and would like to learn more about?

I would like to learn more about programming the machines and robots that MSEI uses to assist workers in manufacturing the circuit boards. The pick and place machine is especially fast and our tour guide alluded to steps it takes to ensure it has a part before placing it. What if the part isn't there for the final check? Does it repeat that action or loop back around to it later? Does it track its inventory of SMDs and alert workers when it is close to running out of a component? How do the collaborative robots sense their environment?