Control System Evaluation

1. System Setup
   1. Tool Rack
      1. Insulation Cutting Tool(ICT) – Exacto Knife
      2. Screw Removal Tool(SRT) – Ratcheting Screwdriver
      3. Cap Removal Tool(CRT) – Suction Cup/Grippers/Pitch Fork
      4. Wire Cutting Tool(WCT) – Wire Clippers Mount
   2. Experiment Station
      1. Materials
         1. ¼” thick foam
         2. ¾” thick foam
         3. Thin insulated wire
         4. Plastic Spacers
         5. C-Clamp with table stand
         6. Foam adhesive
      2. Tool Rack Construction
         1. Slots for 4 tools
         2. Table stand
         3. Long narrow slots
            1. Adjusted for each tools dimension
            2. Tolerance applied for ease of stow/unstow
         4. Plastic/foam/AL housing
      3. Timer
         1. 4 digital stop watches
2. Procedures
   1. Inspection
      1. Use arm mounted camera
      2. Identify box to cut
      3. Trace outline of cutout
      4. Metric :
         1. Time to track outline
   2. Tool Swap 1
      1. Grab screw removal tool from rack
      2. Metric :
         1. Time to acquire tool after finishing inspection
         2. Time to saftely remove affixed tool
         3. Time to move into threading operation position
   3. Threading Operation
      1. Use ratcheting screw driver to remove four screws
      2. Metric:
         1. Time to remove each individual screw
         2. Time to move between screws
         3. Total movement time
         4. Total operational time
   4. Tool Swap 2
      1. Place SRT back in tool rack
      2. Grab ICT Tool
      3. Metric:
         1. Time to place SRT in tool rack after last screw removed
         2. Time to acquire ICT
         3. Time to remove ICT safely
         4. Time to move into insulation cutting position
   5. Insulation Cutting Operation
      1. Insert knife into foam
      2. Follow outline to cut out cap/insulation
      3. Metric:
         1. Time to cut out square
         2. Length of cuts outside of outline
   6. Tool Swap 3
      1. Place ICT back in tool rack
      2. Grab CRT Tool
      3. Metric:
         1. Time to place ICT in tool rack
         2. Time to acquire CRT
         3. Time to remove CRT safely
         4. Time to move into cap removal position
   7. Cap Removal Operation
      1. Securely attach CRT to foam cut out
      2. Remove foam cut out and lay on work bench
      3. Metric:
         1. Time to securely affix cutout to CRT
         2. Time to lay cut out on work bench
   8. Tool Swap 4
      1. Place ICT back in tool rack
      2. Grab CRT Tool
      3. Metric:
         1. Time to place CRT in tool rack
         2. Time to acquire WCT
         3. Time to remove WCT safely
         4. Time to move into wire cutting position
   9. Wire Cutting Operation

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Set-up on 8th

Leave up for a couple days

Go through systems diagrams

Go through evaluation

Demonstration paper work prepped

Ticketmaster nasa discount

Get everything published

Find all versions of code, keep everything together

Damon router, cc jeff ([jeff@theptrgroup.com](mailto:jeff@theptrgroup.com) )

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