



Unique Abilities Needed for Fastener Manufacturing Machines

As of March 13, 2019

GENERAL

- Sorting
- Counting
- Read and interpret documents such as work instructions, safety requirements, process instructions, etc.
- Ability to add, subtract, multiply and divide
- Ability to apply common sense understanding to carry out simple one- or two-step instructions
- Ability to deal with standardized situations with only occasional or no variables
- Housekeeping: cleaning/organizing
- Perform highly repetitive tasks consistently accurately, maintaining detail focus and safety.
- Listening to sounds not important. Could wear ear muffs.
- Machines fed by hand unless otherwise stated.
- Able to perform visual inspection.
- Rigorously follow safety procedures
- High sense of right/wrong in operation and in correctness of parts.
- Use caliper and Micrometer to measure.
- Often working on tiny parts



MANUAL – NO MACHINE

Utility Operator

- Chip spinning/oil recycling
- Wipe down machines
- Keep floors clean/dry
- Move completed jobs to next process
- Load RM

Assembly

- Untangle tiny springs.
- Putting tiny spring and washer on screw.
- Dealing with tiny stuff.
- Using fine tools.
- Highly repetitive.

Packaging and Shipping

- Weigh boxes
- Packaging parts as directed

Inspector

- Able to operate various mechanical and electronic measuring instruments
- Tolerant of high repetition and able to maintain detail focus
- Insistence on accuracy - no "good enough"
- Able to read and interpret blueprints
- Basic math and geometry
- Comparison of multiple measurements to blueprints to determine if the part is correct
- Able to physically handle small parts - some dexterity
- Legible writing skills (sounds obvious but often an issue with existing inspectors)
- Collaboration with co-workers
- Good communication skills if working on the manufacturing floor in line inspector capacity
- Able to tell an operator that his/her parts don't meet specifications without it being a problem to either, e.g., having some sensitivity to the operator's position.



MANUAL MACHINES

Air hammer

- Punch
- A sense of touch.
- Loud noise (bang).
- Using caliper every 5 to 10 units.
- Looking for a crack(s).

Slotter

- Oily.
- Moving cutter.
- Results are sensitive to rate of cutting.
- Use calipers to check dimensions.

Horizontal milling machine

- Machines a round shape into a square shape or hex shape.

Punch press 10 ton

- Tiny part.
- Safety considerations.
- Take out tiny part with a screwdriver.
- Requires sensitive touch.
- Recognition of tool wear
- Basic part measurement using micrometers or calipers

Thread rolling machine

- Sequence:
 - o Put blank in between thread rolling dies.
 - o Assemble three tiny pieces.
 - o Periodically check for dimensions.

Drilling machine

- Manual.
- Lots of oil, messy.
- The bushing holds it in place.
- Recognition of tool wear
- Basic part measurement using micrometers or calipers



SEMIAUTOMATIC MACHINES

Speed lathes

- Place/Load parts on the Ferris Wheel.
- Sequence is: put parts in, start.
- Is semiautomatic



AUTOMATIC MACHINES

Lathes

- Manual and semiautomatic.
- Sequence is: put part in the collet, close collet, oil flow, move cutter, stop, take part out.

Automatic

- Job is to watch and check dimensions.
- Operator watches two to three machines.
- CNC: just watch and periodically check dimensions.
- Both hand fed and automatic feed.
- Experienced operators do the setup.
- Follow work instructions and procedures
- Computer-controlled interface
- Recognition of tool wear

Acme Gridley Screw Machine

- Acme Gridley is a large automatic machine like a Davenport.
- Noisy and Oily.
- Operators run two at a time.
- Periodically check parts for dimensions and clean out chips.
- Major safety considerations.
- Follow work instructions and procedures
- Fundamental trouble-shooting
- Part non-conformance recognition
- Recognition of tool wear