COMPETENCY-BASED OCCUPATIONAL FRAMEWORK FOR REGISTERED APPRENTICESHIP

Stamping Press Operator
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Acknowledgments

We would like to thank several contributors for this framework. First, we would like to thank the National Institute for Metalworking Skills (NIMS), who helped to initially develop this framework and without whom we would not have been able to do this work. Specifically, we would like to thank Catherine Ross and Montez King, who have been critical in the development of this framework. We would also like to specifically thank Rick Nahmensen of True Manufacturing and Peter Ulintz of the Precision Metalforming Association, who have been invaluable in helping vet and further clarify this framework.

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Competency-Based Occupational Frameworks

The Urban Institute, under contract with the US Department of Labor, has worked with employers, subject matter experts, labor unions, trade associations, credentialing organizations, and academics to develop Competency-Based Occupational Frameworks (CBOFs) for Registered Apprenticeship programs. These frameworks define the purpose of an occupation, the job functions that are carried out to fulfill that purpose, the competencies that enable the apprentice to execute those job functions well, and the performance criteria that define the specific knowledge, skills, and personal attributes associated with high performance in the workplace. This organizational hierarchy—job purpose, job functions, competencies, performance criteria—is designed to illustrate that performing work well requires more than just acquiring discrete knowledge elements or developing a series of manual skills. To perform a job well, the employee must be able to assimilate knowledge and skills learned in various settings, recall and apply that information to the present situation, and carry out work activities using sound professional judgment, demonstrating an appropriate attitude or disposition and achieving a level of speed and accuracy necessary to meet the employer’s business need.

The table below compares the terminology of Functional Analysis with that of traditional Occupational Task Analysis to illustrate the important similarities and differences. While both identify the key technical elements of an occupation, functional analysis includes the identification of behaviors, attributes, and characteristics of workers necessary to meet an employer’s expectations.

<table>
<thead>
<tr>
<th>Framework Terminology</th>
<th>Traditional Task Analysis Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Function: the work activities that are carried out to fulfill the job purpose</td>
<td>Job Duties: roles and responsibilities associated with an occupation</td>
</tr>
<tr>
<td>Competency: the actions an individual takes and the attitudes he/she displays to complete those activities</td>
<td>Task: a unit of work or set of activities needed to produce some result</td>
</tr>
<tr>
<td>Performance Criteria: the specific knowledge, skills, dispositions, attributes, speed, and accuracy associated with meeting the employer’s expectations</td>
<td>Subtask: the independent actions taken to perform a unit of work or activity</td>
</tr>
</tbody>
</table>
Although designed for use in competency-based apprenticeship, these Competency-Based Occupational Frameworks also support time-based apprenticeship by defining more clearly and precisely what an apprentice is expected to learn and do during the allocated time period.

CBOFs are comprehensive to encompass the full range of jobs that may be performed by individuals in the same occupation. As employers or sponsors develop their individual apprenticeship programs, they can extract from or add to the framework to meet their unique organizational needs.

Components of the Competency-Based Occupational Framework

Occupational Overview: This section of the framework provides a description of the occupation including its purpose, the setting in which the job is performed, and unique features of the occupation.

Work Process Schedule: This section includes the job functions and competencies that would likely be included in an apprenticeship sponsor’s application for registration. These frameworks provide a point of reference that has already been vetted by industry leaders so sponsors can develop new programs knowing that they will meet or exceed the consensus expectations of peers. Sponsors maintain the ability to customize their programs to meet their unique needs, but omission of a significant number of job functions or competencies should raise questions about whether or not the program has correctly identified the occupation of interest.

Cross-Cutting Competencies: These competencies are common among all workers and focus on the underlying knowledge, attitudes, personal attributes, and interpersonal skills that are important regardless of the occupation. That said, while these competencies are important to all occupations, the relative importance of some versus others may change from one occupation to the next. These relative differences are illustrated in this part of the CBOF and can be used to design pre-apprenticeship programs or design effective screening tools when recruiting apprentices to the program.

Detailed Job Function Analysis: This portion of the framework includes considerable detail and is designed to support curriculum designers and trainers in developing and administering the program. The detail in this section may be confusing to those seeking a more succinct, higher-level view of the program. For this reason, we recommend that the Work Process Schedule be the focus of program planning activities, leaving the detailed job function analysis sections to instructional designers as they engage in their development work.
Using the Competency-Based Occupational Framework to Develop a Registered Apprenticeship Program

When developing a registered apprenticeship program, the Work Process Schedule included in this CBOF provides an overview of the job functions and competencies an expert peer group deemed to be important to this occupation. The Work Process Schedule in this document can be used directly, or modified and used to describe your program content and design as part of your registration application.

When designing the curriculum to support the apprenticeship program—including on-the-job training and related technical instruction—the information the Detailed Job Functions section could be helpful. These more detailed job function documents include recommendations for the key knowledge and skills that might be included in the classroom instruction designed to support a given job function, and the performance criteria provided under each competency could be helpful to trainers and mentors in evaluating apprentice performance and insuring inter-rater reliability when multiple mentors are involved.
Stamping Press Operator

Occupational Overview

Occupational Purpose and Context

Stamping Press Operators set up, operate, or tend machines to inspect, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.

Potential Job Titles


Attitudes and Behaviors

Stamping press operators should have well-developed critical thinking skills to solve problems quickly, must have strong interpersonal skills including good listening skills and cultural sensitivity, and must be able to understand implications of new information used in problem solving and decision making. They should be able to pay attention to specifics or details, stay focused despite distractions, combine pieces of information to form general rules or conclusions, and arrange objects or actions in an order or pattern related to a specific rule or set of rules.

Apprenticeship Prerequisites

Existing workers may be able to demonstrate their competence against the standards in shorter time periods and access necessary education and training through community colleges, private programs, training centers, retraining, or upgrading.

Occupational Pathways

n/a
## Certifications, Licensure, and Other Credential Requirements

<table>
<thead>
<tr>
<th>Credential</th>
<th>Offered by</th>
<th>Before, During, or After Apprenticeship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metalforming Level I</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Parts Inspection and Quality Control</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Operate with Single-Hit Tooling II</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Operate with Compound Dies II</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Operate with Progressive Dies II</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Operate with Deep-Draw Dies II</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Operate with Transfer Dies II</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Setup with Single-Hit Tooling III</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Setup with Compound Dies III</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Setup with Progressive Dies III</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Setup with Deep-Draw Dies III</td>
<td>NIMS</td>
<td>During</td>
</tr>
<tr>
<td>Setup with Transfer Dies III</td>
<td>NIMS</td>
<td>During</td>
</tr>
</tbody>
</table>

## Job Functions

<table>
<thead>
<tr>
<th>Job Functions</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inspects parts for quality and compliance</td>
<td>Core</td>
</tr>
<tr>
<td>2. Plans job and prepares for setup and production</td>
<td>Core</td>
</tr>
<tr>
<td>3. Sets up safety equipment and devices</td>
<td>Core</td>
</tr>
<tr>
<td>4. Sets up die</td>
<td>Core</td>
</tr>
<tr>
<td>5. Sets up auxiliaries and press</td>
<td>Core</td>
</tr>
<tr>
<td>6. Runs production</td>
<td>Core</td>
</tr>
<tr>
<td>7. Troubleshoots operations</td>
<td>Core</td>
</tr>
<tr>
<td>8. Conducts end-of-run requirements</td>
<td>Core</td>
</tr>
</tbody>
</table>
Stackable Programs

This occupational framework is designed to link to the following additional framework(s) as part of a career laddering pathway.

<table>
<thead>
<tr>
<th>Stackable Programs</th>
<th>Base or Higher Level</th>
<th>Stacks on Top of</th>
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<tbody>
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<td>n/a</td>
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</tbody>
</table>

Options and Specializations

The following options and specializations have been identified for this occupation. The Work Process Schedule and individual job function outlines indicate which job functions and competencies were deemed by industry advisors to be optional. Work Process Schedules for Specializations are included at the end of this document.

<table>
<thead>
<tr>
<th>Options and Specializations</th>
<th>Option</th>
<th>Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Die Setter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine Setter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punch Press Operator</td>
<td></td>
<td></td>
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<tr>
<td>Setup Operator</td>
<td></td>
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</tbody>
</table>

Levels

Industry advisors have indicated that individuals in this occupation may function at different levels, based on the nature of their work, the amount of time spent in an apprenticeship, the level of skills or knowledge mastery, and the degree of independence in performing the job or supervisory/management responsibilities.

<table>
<thead>
<tr>
<th>Level</th>
<th>Distinguishing Features</th>
<th>Added Competencies</th>
<th>Added Time Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Job Function 1: Inspects parts for quality and compliance**

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Measures and verifies materials for quality and size</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Matches and inspects parts to print</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Measures heights and depths</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Checks and records part profiles</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Job Function 2: Plans job and prepares for setup and production**

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Reliably follows the instructions of others</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Willingly asks questions about things not fully understood</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Works with due regard for the safety of others</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Job Function 3: Sets up safety equipment and devices

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Cleans, connects, and verifies shortfeed detectors and sensors</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Tests and verifies operation of light curtains and mats</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Installs and inspects safety equipment</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Sets program tonnage monitor to predetermined engineering specifications</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Job Function 4: Sets up die

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Determines and sets shut height</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Cleans bolster, ram, and top/bottom of die</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Selects clamping devices and aligns and places die in press</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Checks, installs, and sets bolster blocks, dies, and material bridge</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Replaces/cleans filters and greases/lubes guide components</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Sets pilot release, knockouts, air cushion, and manifold pressure</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Installs and adjusts lubrication system or equipment</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Runs and inspects first parts</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Inspects parts for compliance during run, makes adjustments, and seeks approval</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Job Function 5: Sets up auxiliaries and press

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Installs conveyors, stackers, and part-out conveyors</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Positions/sets uncoiler, magazine or blank, and material/feeder</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Sets/adjusts straightener, feed length, and leveler</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Sets tension on slack loop</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Installs/sets transfer or automated system or devices and hydraulic and/or pneumatic systems</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Orient parts for secondary operations, prepares/positions part-cleaning equipment, and sets/positions packaging for production</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Cleans feed and straightener rollers</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Job Function 6: Runs production

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Loads coil, strip, or blanks</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Starts and stops press</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Feeds and welds material properly</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Monitors, removes and replaces, and replenishes parts if necessary</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Sets press speed and adjusts shut height</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Packages finished parts</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Sets and adjusts counter balance</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Monitors and adjusts controls and, if necessary, transfers them</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Job Function 7: Troubleshoots operations

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Determines cause of double hits</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Finds out why material has buckled</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Diagnoses the cause of a short/overfeed condition</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Finds out why press will not start</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Responds to sensor faults</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Determines why parts have visual defects</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Job Function 8: Conducts end-of-run requirements

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Core or Optional</th>
<th>RTI</th>
<th>OJT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Submits final parts for inspection and receives approval</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Completes end-of-run documentation</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Removes die from press, stages for storage, and organizes die-clamping devices for next setup</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Stages and organizes die-clamping devices for next setup</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Empties scrap bins/containers, cleans conveyors and/or chutes, and stages completed parts for pickup</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Returns or prepares unused material (pickup or inventory)</td>
<td>Core</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Related Technical Instruction Plan

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>Course Number</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEARNING OBJECTIVES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COURSE NAME</td>
<td>Course Number</td>
<td>Hours</td>
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<tr>
<td>LEARNING OBJECTIVES</td>
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<td>LEARNING OBJECTIVES</td>
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<td>COURSE NAME</td>
<td>Course Number</td>
<td>Hours</td>
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<tr>
<td>LEARNING OBJECTIVES</td>
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## Cross-Cutting Competencies

<table>
<thead>
<tr>
<th>COMPETENCY**</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td><strong>Personal Effectiveness</strong></td>
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<td>Interpersonal Skills</td>
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<td>Working with Tools and Technology</td>
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</table>

** The names of the cross-cutting competencies come from the US Department of Labor’s Competency Model Clearinghouse, and definitions for each can be viewed at https://www.careeronestop.org/CompetencyModel/competency-models/building-blocks-model.aspx.

Cross-cutting competencies identify transferable skills—sometimes called “soft skills” or “employability skills”—that are important for workplace success, regardless of a person’s occupation. Still, the relative
importance of specific cross-cutting competencies differs from occupation to occupation. The cross-cutting competencies table, above, provides information about which of these competencies is most important to be successful in a particular occupation. This information can be useful to employers or intermediaries in screening and selecting candidates for apprenticeship programs, or to pre-apprenticeship providers who seek to prepare individuals for successful entry into an apprenticeship program.

The scoring system utilized to evaluate competency levels required in each cross-cutting skill aligns with the recommendations of the Lumina Foundation’s Connecting Credentials Framework. The framework can be found at [http://connectingcredentials.org/wp-content/uploads/2015/05/ConnectingCredentials-4-29-30.pdf](http://connectingcredentials.org/wp-content/uploads/2015/05/ConnectingCredentials-4-29-30.pdf).
Detailed Job Functions

Job Function 1: Inspects parts for quality and compliance

<table>
<thead>
<tr>
<th>Related Technical Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNOWLEDGE</td>
</tr>
<tr>
<td>• Measurements</td>
</tr>
<tr>
<td>• Material standards</td>
</tr>
<tr>
<td>• Part profiles</td>
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</table>

Competency A: Measures and verifies materials for quality and size

**PERFORMANCE CRITERIA**

1. Identifies the required instruments to be checked out according to part, process plan, print, and/or tolerance specifications Core
2. Successfully checks out instruments from lab, quality department, stores, or tool crib Core
3. Checks calibration stickers/tags to ensure dates are current Core
4. Transports instruments to inspection site without incident Core

Competency B: Matches and inspects parts to print

**PERFORMANCE CRITERIA**

1. Lays instruments out in logical order Core
2. Surfaces plate so it’s level/flat and clean Core
3. Ensures instruments free of any oils, dust, debris, and dirt Core
4. Cleans contact points Core
5. Checks instruments (moving parts and/or readouts) for function Core
### Competency C: Measures heights and depths

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tests block and/or conducts standard clean and setup</td>
<td>Core</td>
</tr>
<tr>
<td>2. Demonstrates skill and accuracy comparing readings to standard</td>
<td>Core</td>
</tr>
<tr>
<td>3. Verifies for calibration against known standards</td>
<td>Core</td>
</tr>
<tr>
<td>4. Confirms instruments are accurate</td>
<td>Core</td>
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</tbody>
</table>

### Competency D: Checks and records part profiles

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensures parts are properly positioned/set for profile, feature inspection, and</td>
<td>Core</td>
</tr>
<tr>
<td>comparison verification (dimensional and geometric)</td>
<td></td>
</tr>
<tr>
<td>2. Initializes controlled and program initiated</td>
<td>Core</td>
</tr>
<tr>
<td>3. Checks part profile and hole positions(s) and size (CMM/OGP only)</td>
<td>Core</td>
</tr>
<tr>
<td>4. Ensures comparator (shadow or reflection) is in correct position and candidate</td>
<td>Core</td>
</tr>
<tr>
<td>accurately checks part profile/control limits and features (location, position, and</td>
<td></td>
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<tr>
<td>size)</td>
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<tr>
<td>5. Shuts down equipment and records results</td>
<td>Core</td>
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</tbody>
</table>
Job Function 2: Plans job and prepares for setup and production

Related Technical Instruction

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Company policies and hierarchy</td>
<td>• Using proper procedures when working</td>
<td>• None</td>
</tr>
<tr>
<td></td>
<td>• Maintaining situational awareness</td>
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<td></td>
<td>• Logical thinking</td>
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<tr>
<td></td>
<td>• Clear oral communication</td>
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<td></td>
<td>• Identifying problems and correcting them</td>
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<td></td>
<td>• Teamwork</td>
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</table>

Competency A: Reliably follows the instructions of others

PERFORMANCE CRITERIA

1. Follows the instructions of supervisors and offers constructive feedback to ensure proper completion of tasks

Core

Competency B: Willingly asks questions about things not fully understood

PERFORMANCE CRITERIA

1. Asks about techniques, components, installation, technical aspects, and other key areas of job that are not fully clear

Core

Competency C: Works with due regard for the safety of others

PERFORMANCE CRITERIA

1. Demonstrates safe workplace practices in material and tool handling and in machine operations

Core

2. Explains actions that directly or indirectly affect safe practices during assigned responsibilities

Core
### Competency D: Establishes a system of maintaining appropriate notes and reminders and completes any required logs, calibration records, etc.

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th>Core or Optional</th>
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</thead>
<tbody>
<tr>
<td>1. Writes and records critical information for proper job functioning</td>
</tr>
<tr>
<td>2. Types information into easily accessible computer filing systems</td>
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</tbody>
</table>

### Competency E: Ensures proper communications between previous and next shifts, with both operations and supervision

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th>Core or Optional</th>
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<tbody>
<tr>
<td>1. Demonstrates appropriate interpersonal skills with a supervisor or team leader and other team members to ensure work is smoothly continued from one shift to the next</td>
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</table>

### Competency F: Identifies problems and changes which could lead to problems by exchanging information with operators, supervisors, and others

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th>Core or Optional</th>
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<tbody>
<tr>
<td>1. Analyzes the problem(s) and proposes remedies when authorized to carry them out</td>
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</table>

### Competency G: Establishes trust and rapport with operators, supervisors, and others

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th>Core or Optional</th>
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<tbody>
<tr>
<td>1. Reaches out to and communicates with members of the team to discuss work and any issues that may arise</td>
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</table>
Job Function 3: Sets up safety equipment and devices

Related Technical Instruction

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
</table>
| - OSHA safety standards  
- Safety equipment functionality  
- Weight standards | - Selecting proper tools and procedures  
- Using proper procedures when working  
- Maintaining situational awareness  
- Clear thinking  
- Identifying problems and correcting them | - Electrical tape (as needed)  
- Screwdrivers  
- Sensor test box (as needed)  
- Shop cloth (lint-free) or air duster  
- Solder/heat gun and solder (as needed)  
- Wire clamps or hold-down devices (as needed)  
- Wiring diagram (as needed)  
- Wrenches (assorted) |

Competency A: Cleans, connects, and verifies shortfeed detectors and sensors

PERFORMANCE CRITERIA

1. Connects plugs/ports or wiring securely to matching readout devices/safeties, ensuring all sensors and marks/labels match. Core
2. Checks wiring or pneumatic lines and reroutes them as needed. Core
3. Ensures sensors are in proper alignment/position. Core
4. Cleans sensors. Core
5. Performs lockout procedures. Core
6. Powers up presses. Core

Competency B: Tests and verifies operation of light curtains and mats

PERFORMANCE CRITERIA

1. Ensures light curtains and safety mats are present, hooked up, and showing no signs of damage. Core
2. Places hand in front of light and stops press. Core
3. Steps on and off safety mat to stop press. Core
4. Stops presses at OSHA designated distance. Core
5. Ensures light curtains and safety mats work properly. Core
### Competency C: Installs and inspects safety equipment

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>1. Carries out routine maintenance, reports problems that are beyond the scope of authority, and fills out the history forms for tracking maintenance</td>
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### Competency D: Sets program tonnage monitor to predetermined engineering specifications

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<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>1. Selects correct program for die limits (range) set on monitor</td>
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<tr>
<td>2. Limits range set on tonnage monitor—not to exceed 90% of press capacity</td>
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<tr>
<td>3. Does not set tonnage monitor in excess of die tonnage requirement</td>
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<tr>
<td>4. Verifies maximum allowable tonnage was not exceeded</td>
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<tr>
<td>5. Sets tonnage monitor to allow specified tonnage range</td>
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Job Function 4: Sets up die

**Related Technical Instruction**

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<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
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<tbody>
<tr>
<td>Measurements • Material standards • Part profiles</td>
<td>Selecting proper tools and procedures • Using proper procedures when working • Maintaining situational awareness • Clear thinking • Identifying problems and correcting them</td>
<td>Die record/information sheet • Process/setup plan • Shop wipes • Stone/file • Tape measure</td>
</tr>
</tbody>
</table>

**Competency A: Determines and sets shut height**

PERFORMANCE CRITERIA

1. Calculates shut height
2. Cleans rams/slides and bolsters, ensuring no visual signs of damage
3. Removes accessories
4. Sets aside and removes safety blocks
5. Presses set at BDC (bottom of stoke)
6. Measures distance from the ram to the bolster plate
7. Initiates shut height preset just above (or greater than) the required shut height

**Competency B: Cleans bolster, ram, and top/bottom of die**

PERFORMANCE CRITERIA

1. Cleans rams/slides and bolsters, ensuring no visual signs of damage
2. Removes accessories (as needed)
3. Removes and sets aside safety blocks
4. Sets presses at bottom of stoke
5. Measures distance from the ram to the bolster plate
6. Initiates shut height preset just above (or greater than) the required shut height
### Competency C: Selects clamping devices and aligns and places die in press

**PERFORMANCE CRITERIA**

<table>
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<tr>
<th>Task</th>
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<tbody>
<tr>
<td>1. Installs clamps or clamping devices</td>
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<tr>
<td>2. Demonstrates safe work practices in proper use of safety blocks</td>
<td>Core</td>
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<tr>
<td>3. Verifies installation by dry run and jog/inch mode, ensuring die did not move, remained tight, and functioned as designed</td>
<td>Core</td>
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<td>4. Clamps die square and properly into place</td>
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<td>5. Cleans and readies work area and die assembly to accept material for final adjustments</td>
<td>Core</td>
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### Competency D: Checks, installs, and sets bolster blocks, dies, and material bridge

**PERFORMANCE CRITERIA**

<table>
<thead>
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<th>Task</th>
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<tr>
<td>1. Puts die on-center and square to bolster plate</td>
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<tr>
<td>2. Places die against locators</td>
<td>Core</td>
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<tr>
<td>3. Demonstrates accuracy when measuring gap between shoe and ram face</td>
<td>Core</td>
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<tr>
<td>4. Establishes initial gap between upper shoe and ram face, allowing for final shut height adjustments (typically 1.0” ± 0.25)</td>
<td>Core</td>
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<td>5. Sets die in position to accept material</td>
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<tr>
<td>6. Demonstrates accuracy and skill manipulating ram in jog or inch mode</td>
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### Competency E: Replaces/cleans filters and greases/lubes guide components

**PERFORMANCE CRITERIA**

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<th>Task</th>
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<tr>
<td>1. Follows login and start-up procedures: controller communicating with computer, program selected, parameters/coordinates set, fixtures/workholders set, and psi, voltage, and/or filtering correct and stable</td>
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<tr>
<td>2. Completes equipment setup and readies inspection</td>
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### Competency F: Sets pilot release, knockouts, air cushion, and manifold pressure

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<tr>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>1. Enters pilots into material</td>
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<td>2. Evens stripper with stock guides</td>
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<td>3. Ensures pilots are entering die face</td>
<td>Core</td>
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<tr>
<td>4. Releases material from feed rolls and material held by pilots</td>
<td>Core</td>
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<tr>
<td>5. Matches settings to setup-sheet specifications</td>
<td>Core</td>
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<tr>
<td>6. Places pilots’ strip/coil in the correct progression as die is closed</td>
<td>Core</td>
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<tr>
<td>7. Releases and verifies pilots set</td>
<td>Core</td>
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<td>8. Holds material with pilots when feed rolls are open</td>
<td>Core</td>
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<tr>
<td>9. Ensures press is ready to run in auto mode</td>
<td>Core</td>
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### Competency G: Installs/adjusts lubrication system or equipment

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<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>1. Sets and supports line run into connectors from source to press</td>
<td>Core</td>
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<tr>
<td>2. Checks that there are no kinks, leaks, or extreme bends in and throughout length of line</td>
<td>Core</td>
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<tr>
<td>3. Ensures line not contaminated</td>
<td>Core</td>
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<tr>
<td>4. Flows lube or coolant at designed pressure through line without incident or malfunction</td>
<td>Core</td>
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<tr>
<td>5. Sets pressure/flow rate and ensures the right amount of coolant or lubrication is being delivered to the proper location, device, or output</td>
<td>Core</td>
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### Competency H: Runs and inspects first parts

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<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>1. Removes and sets aside safety blocks</td>
<td>Core</td>
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<tr>
<td>2. Checks all safety devices (e.g., light curtains) for reliability and function</td>
<td>Core</td>
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<tr>
<td>3. Starts press without incident</td>
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<tr>
<td>4. Dry cycles press, ensuring press does not crash and verifying minimum allowable space to install die easily and safely</td>
<td>Core</td>
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<td>5. Verifies clearances (stroke plus the minimum height allowance)</td>
<td>Core</td>
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<tr>
<td>6. Returns ram to TDC—Top of stroke</td>
<td>Core</td>
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<tr>
<td>7. Shuts down power and ensures press shutdown</td>
<td>Core</td>
</tr>
<tr>
<td>8. Reinstalls safety blocks</td>
<td>Core</td>
</tr>
<tr>
<td>9. Readies presses to install die</td>
<td>Core</td>
</tr>
<tr>
<td>Competency I: Inspects parts for compliance during run, makes adjustments, and seeks approval</td>
<td>Core or Optional</td>
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<td>---------------------------------</td>
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</tr>
<tr>
<td><strong>PERFORMANCE CRITERIA</strong></td>
<td></td>
</tr>
<tr>
<td>1. Measures part with the correct instruments/devices</td>
<td>Core</td>
</tr>
<tr>
<td>2. Obtains dimensions within the following minimum tolerances:</td>
<td>Core</td>
</tr>
<tr>
<td>a. Caliper measurements ± .005</td>
<td></td>
</tr>
<tr>
<td>b. Micrometer measurements ± .001</td>
<td></td>
</tr>
<tr>
<td>Indicator measurements ± .0005</td>
<td></td>
</tr>
<tr>
<td>3. Demonstrates competency and accuracy in positioning and using handheld measuring instruments when taking measurements</td>
<td>Core</td>
</tr>
<tr>
<td>4. Identifies and legibly records conformance (within tolerance)/nonconformance (out of tolerance) of part as per sampling, print, or process/inspection plan</td>
<td>Core</td>
</tr>
<tr>
<td>5. Checks that parts and instruments were not damaged during the measuring process</td>
<td>Core</td>
</tr>
</tbody>
</table>
Job Function 5: Set up auxiliaries and press

### Related Technical Instruction

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Measurements</td>
<td>• Selecting proper tools and procedures</td>
<td>• Programmable Logic Controllers (PLCs)</td>
</tr>
<tr>
<td>• Material standards</td>
<td>• Using proper procedures when working</td>
<td>• Coilers</td>
</tr>
<tr>
<td>• Part profiles</td>
<td>• Maintaining situational awareness</td>
<td>• Guides/rollers</td>
</tr>
<tr>
<td>• Installation</td>
<td>• Clear thinking</td>
<td>• Slack loop</td>
</tr>
<tr>
<td></td>
<td>• Identifying problems and correcting them</td>
<td>• Press (coil fed or single hit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pry bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Shop wipes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sockets and ratchet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Solvents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tee nuts and bolts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wrenches (Allen and adjustable)</td>
</tr>
</tbody>
</table>

### Competency A: Installs conveyors, stackers, and part-out conveyors

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describes how to interface a PLC to a robot using discrete I/O</td>
</tr>
<tr>
<td>Core</td>
</tr>
<tr>
<td>2. Designs a mechatronics PLC-to-robot workstation interface wiring diagram using discrete I/O</td>
</tr>
<tr>
<td>Core</td>
</tr>
</tbody>
</table>

### Competency B: Positions/sets uncoiler, magazine or blank, and material/feeder

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Places material onto uncoiler/rereeling device without incident</td>
</tr>
<tr>
<td>Core</td>
</tr>
<tr>
<td>2. Accepts stock of reel mandrels/coil keepers while material secured to uncoiling/rereeling device</td>
</tr>
<tr>
<td>Core</td>
</tr>
<tr>
<td>3. Accepts width of stock cradle, confining plates of coil while material secured to cradle</td>
</tr>
<tr>
<td>Core</td>
</tr>
</tbody>
</table>

### Competency C: Sets/adjusts straightener, feed length, and leveler

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Selects manual mode of operation</td>
</tr>
<tr>
<td>Core</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

**Competency D: Sets tension on slack loop**

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th></th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sets the feed according to the type of feed, following manufacturer’s instructions</td>
</tr>
<tr>
<td>2.</td>
<td>Establishes correct slack loop length and height</td>
</tr>
<tr>
<td>3.</td>
<td>Ensures material at correct start position and ready for first hit</td>
</tr>
</tbody>
</table>

**Competency E: Installs/sets transfer or automated system or devices and hydraulic and/or pneumatic systems**

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th></th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Checks connections for damage and cleanliness</td>
</tr>
<tr>
<td>2.</td>
<td>Installs/replaces lines of proper gauge</td>
</tr>
<tr>
<td>3.</td>
<td>Ensures lines receiving power/pressure without malfunction, surge, or brownout</td>
</tr>
<tr>
<td>4.</td>
<td>Checks that auxiliary equipment is receiving power and working</td>
</tr>
</tbody>
</table>

**Competency F: Orients parts for secondary operations, prepares/positions part cleaning equipment, and sets/positions packaging for production**

**PERFORMANCE CRITERIA**

<table>
<thead>
<tr>
<th></th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Identifies material by ID tag, customer, heat number, or SO number</td>
</tr>
<tr>
<td>2.</td>
<td>Recognizes material type and any special conditions (i.e., clad, galvanized, Teflon, etc.)</td>
</tr>
<tr>
<td>3.</td>
<td>Removes and disposes of any material packaging or covering</td>
</tr>
<tr>
<td>4.</td>
<td>Verifies material against process plan/production packet or router</td>
</tr>
</tbody>
</table>
### Competency G: Cleans feeds and straightener rollers

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Selects manual mode of operation</td>
<td>Core</td>
</tr>
<tr>
<td>2. Tests manual mode to see if operational</td>
<td>Core</td>
</tr>
<tr>
<td>3. Opens pinch rolls</td>
<td>Core</td>
</tr>
<tr>
<td>4. Opens entrance and guides rollers</td>
<td>Core</td>
</tr>
<tr>
<td>5. Cleans and checks material for coil set</td>
<td>Core</td>
</tr>
<tr>
<td>6. Resets guide rolls</td>
<td>Core</td>
</tr>
<tr>
<td>7. Lowers adjusting rollers and pinch rollers and initiates JOG mode</td>
<td>Core</td>
</tr>
<tr>
<td>8. Ensures material accepted by straightener</td>
<td>Core</td>
</tr>
</tbody>
</table>
### Job Function 6: Runs production

#### Related Technical Instruction

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Measurements</td>
<td>• Selecting proper tools and procedures</td>
<td>• Band cutter</td>
</tr>
<tr>
<td>• Material standards</td>
<td>• Using proper procedures when working</td>
<td>• Coil, strip, or blanks</td>
</tr>
<tr>
<td>• Part profiles</td>
<td>• Maintaining situational awareness</td>
<td>• Die bar</td>
</tr>
<tr>
<td>• Installation</td>
<td>• Clear thinking</td>
<td>• Setup sheet</td>
</tr>
<tr>
<td></td>
<td>• Identifying problems and correcting them</td>
<td>• Screwdriver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stamping press and feeder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wrenches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Forklift and/or crane/hoist with rigging</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nibbler/snips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Process plan/production Packet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Uncoiler, cradle, lift table, or magazine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Micrometer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pilot hole verification device</td>
</tr>
</tbody>
</table>

#### Competency A: Loads coil, strip, or blanks

**PERFORMANCE CRITERIA**

1. Identifies material by ID tag, customer, heat number, or SO number  
   Core
2. Recognizes material type and any special conditions (i.e., clad, galvanized, Teflon, etc.)  
   Core
3. Removes and disposes of any material packaging or covering  
   Core
4. Verifies material against process plan/production packet or router  
   Core

#### Competency B: Starts and stops press

**PERFORMANCE CRITERIA**

1. Checks safety devices/safeguarding for reliability and function  
   Core
2. Checks lubrication system for function  
   Core
3. Ensures press motor started without incident  
   Core
4. Ensures press powered-up and operational  
   Core
### Competency C: Feeds and welds material properly

**PERFORMANCE CRITERIA**

1. Feeds material (inch/JOGmode) straight into press without buckling  
   - Core
2. Demonstrates skill and ability using press mode controls  
   - Core
3. Locates first hit/punch location correctly  
   - Core
4. Stocks material at first hit location  
   - Core
5. Locks feed into first-hit position  
   - Core
6. Ensures feeder is in setup mode  
   - Core
7. Clears die and area of any loose scrap or parts  
   - Core
8. Ensures first-hit punch is in position  
   - Core
9. Initiates first hit successfully  
   - Core
10. Ensures first hit is retracted  
    - Core
11. Ensures material is fed smoothly to next progression/station  
    - Core
12. Checks for loose scraps and obstruction in all stations  
    - Core
13. Confirms part off of die  
    - Core
14. Confirms scrap came out of die  
    - Core
15. Checks if die lubrication and sensors working properly  
    - Core
16. Inspects part visually for flaws, damage, or defects  
    - Core
17. Feeds material flat and smooth through each die station and to payout area  
    - Core
18. Ensures die/press runs on auto or continuous mode  
    - Core

### Competency D: Monitors, removes and replaces, and replenishes parts if necessary

**PERFORMANCE CRITERIA**

1. Checks coil/strip visually for adverse conditions (i.e., oxidation, lamination, telescoping, clock spring, etc.)  
   - Core
2. Verifies material dimensions against process plan/production packet specifications  
   - Core

### Competency E: Sets press speed and adjusts shut height

**PERFORMANCE CRITERIA**

1. Verifies lead/solder readings  
   - Core
2. Confirms all stop-block readings with lead or solder  
   - Core
3. Ensures ram/slide successfully adjusted to attain lead/solder reading on setup sheet  
   - Core
4. Ensures ram/slide manipulation performed safely and accurately to shut height requirements  
   - Core
5. Checks ram to be relocked or tightened  
   - Core
6. Checks if proper shut height is accomplished  
   - Core
### Competency F: Packages finished parts

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates safe work practices when using forklift or coil cart</td>
<td>Core</td>
</tr>
<tr>
<td>2. Moves material to and places it in staging area</td>
<td>Core</td>
</tr>
<tr>
<td>3. Ensures material was not damaged during transport</td>
<td>Core</td>
</tr>
<tr>
<td>4. Demonstrates ability when rigging, positioning, and distancing material onto mandrel, cradle, or lift table</td>
<td>Core</td>
</tr>
<tr>
<td>5. Ensures load did not exceed rated capacity of crane, hoist, or forklift</td>
<td>Core</td>
</tr>
<tr>
<td>6. Places material (coil eye) onto uncoiler/rereeling device without incident</td>
<td>Core</td>
</tr>
<tr>
<td>7. Ensures stock reel mandrels/coil keepers accepted ID of coil; material secured to uncoiling/rereeling device</td>
<td>Core</td>
</tr>
<tr>
<td>8. Confirms stock cradle confining plates accepted width (or outside diameter of coil; material secured to cradle)</td>
<td>Core</td>
</tr>
<tr>
<td>9. Demonstrates safe work practices when removing coil bands or stock binding</td>
<td>Core</td>
</tr>
<tr>
<td>10. Stacks and aligns strips or blanks on lift table or in magazine</td>
<td>Core</td>
</tr>
<tr>
<td>11. Removes (cuts) damaged or unusable leading edge of material</td>
<td>Core</td>
</tr>
<tr>
<td>12. Ensures sufficient amount of material loaded for production and leading edge ready to advance</td>
<td>Core</td>
</tr>
</tbody>
</table>

### Competency G: Sets/adjusts counter balance

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Removes and sets aside safety blocks</td>
<td>Core</td>
</tr>
<tr>
<td>2. Verifies safety curtains and other safeguarding devices reset for function</td>
<td>Core</td>
</tr>
<tr>
<td>3. Powers up and starts presses without incident</td>
<td>Core</td>
</tr>
</tbody>
</table>

### Competency H: Monitors and adjusts controls and, if necessary, transfers them

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Locates counterbalance tag</td>
<td>Core</td>
</tr>
<tr>
<td>2. Identifies air pressure gauge</td>
<td>Core</td>
</tr>
<tr>
<td>3. Places slide at 90° position in the stroke, releases the brake, and adjusts the air pressure until slide dwelled at 90°</td>
<td>Core</td>
</tr>
<tr>
<td>4. Places press in the continuous mode with amp meter attached to one of the main motor leads</td>
<td>Core</td>
</tr>
<tr>
<td>5. Ensures air pressure (psi) matches the weight of the punch-half/upper-die weight</td>
<td>Core</td>
</tr>
</tbody>
</table>
## Job Function 7: Troubleshoots operations

### Related Technical Instruction

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Equipment troubleshooting</td>
<td>• Selecting proper tools and procedures</td>
<td>• Stamping press</td>
</tr>
<tr>
<td>• Safety equipment functionality</td>
<td>• Using proper procedures when working</td>
<td>• Sensors</td>
</tr>
<tr>
<td></td>
<td>• Maintaining situational awareness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Clear thinking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identifying problems and correcting them</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Selecting proper tools and procedures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Using proper procedures when working</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Maintaining situational awareness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Clear thinking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identifying problems and correcting them</td>
<td></td>
</tr>
</tbody>
</table>

### Competency A: Determines cause of double hits

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Recognizes the problem, condition, or situation in a timely manner</td>
<td>Core</td>
</tr>
<tr>
<td>2. Observes operations and interviews appropriate personnel to obtain information</td>
<td>Core</td>
</tr>
<tr>
<td>3. Works with a team to troubleshoot the cause of the problem</td>
<td>Core</td>
</tr>
<tr>
<td>4. Uses visual/instrument indicators to identify the trouble (gauges, meters, dials, alarms, control lights and messages, etc.)</td>
<td>Core</td>
</tr>
<tr>
<td>5. Uses physical indicators to identify the trouble (sounds, smells, sight, temperatures, part/material deflects, etc.)</td>
<td>Core</td>
</tr>
<tr>
<td>6. Checks electromechanical or hydraulic/pneumatic devices to identify the problem</td>
<td>Core</td>
</tr>
<tr>
<td>7. Checks sensor malfunctions</td>
<td>Core</td>
</tr>
<tr>
<td>8. Checks material to identify the problem (dimensions, stress, corrosion, coil set, buckling, slippage, wobble, etc.)</td>
<td>Core</td>
</tr>
<tr>
<td>9. Obtains necessary archives, records, studies, documents, prints, data, and manuals</td>
<td>Core</td>
</tr>
</tbody>
</table>

### Competency B: Finds out why material has buckled

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Checks material to understand why it is buckling</td>
<td>Core</td>
</tr>
<tr>
<td>2. Obtains necessary archives, records, studies, documents, prints, data, and manuals</td>
<td>Core</td>
</tr>
</tbody>
</table>
### Competency C: Diagnoses the cause of a short/overfeed condition

**PERFORMANCE CRITERIA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Analyzes the symptoms, using cause-and-effect relationships</td>
</tr>
<tr>
<td>2.</td>
<td>Forms deductive theories using models, technical ability, teamwork, and knowledge of tooling, equipment, and program</td>
</tr>
<tr>
<td>3.</td>
<td>Prioritizes possible theories using a systematic approach to locate the trouble spot</td>
</tr>
<tr>
<td>4.</td>
<td>Tests theories in a logical and sequential order</td>
</tr>
<tr>
<td>5.</td>
<td>Shows persistence to dig for root cause and generate an effective solution</td>
</tr>
<tr>
<td>6.</td>
<td>Uses information/data from diverse/multiple sources and suggests possible courses of action</td>
</tr>
</tbody>
</table>

### Competency D: Finds out why press will not start

**PERFORMANCE CRITERIA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Defines the troubleshooting path (as electrical/mechanical, sensor defect, material defect, tooling/die defect, etc.) and locates where the trouble is occurring</td>
</tr>
<tr>
<td>2.</td>
<td>Considers alternatives and associated risks before deciding to take action</td>
</tr>
<tr>
<td>3.</td>
<td>Provides advice, constructive feedback, practical instruction, and “how-to” directions with rationale</td>
</tr>
<tr>
<td>4.</td>
<td>Locates the general cause of the problem; then isolates the root cause(s) of the problem</td>
</tr>
<tr>
<td>5.</td>
<td>Evaluates possible solutions</td>
</tr>
<tr>
<td>6.</td>
<td>Prepares appropriate action plans</td>
</tr>
<tr>
<td>7.</td>
<td>Documents the troubleshooting process, path, and findings/results</td>
</tr>
</tbody>
</table>

### Competency E: Responds to sensor faults

**PERFORMANCE CRITERIA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tests sensors for functionality</td>
</tr>
<tr>
<td>2.</td>
<td>Ensures all sensors are receiving power within range</td>
</tr>
<tr>
<td>3.</td>
<td>Resets sensor/die controller as needed</td>
</tr>
</tbody>
</table>
### Competency F: Determines why parts have visual defects

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
<th>Core or Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Uses cause-and-effect relationships to analyze the symptoms</td>
<td>Core</td>
</tr>
<tr>
<td>2. Forms deductive theories using models, technical ability, teamwork, and knowledge of tooling, equipment, and program</td>
<td>Core</td>
</tr>
<tr>
<td>3. Prioritizes possible theories using systematic approach to locate the trouble spot</td>
<td>Core</td>
</tr>
</tbody>
</table>
Job Function 8: Conducts end-of-run requirements

**Related Technical Instruction**

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>SKILLS</th>
<th>TOOLS &amp; TECHNOLOGIES</th>
</tr>
</thead>
</table>
| • OSHA safety standards  
• Safety equipment functionality | • Selecting proper tools and procedures  
• Using proper procedures when working  
• Maintaining situational awareness  
• Clear thinking  
• Identifying problems and correcting them | • Stamping press  
• Sensors |

**Competency A: Submits final parts for inspection and receives approval**

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Runs the required number of parts according to process plan</td>
</tr>
<tr>
<td>2. Recognizes EOR; stops process</td>
</tr>
<tr>
<td>3. Prepares press for last-part safe removal</td>
</tr>
<tr>
<td>4. Ensures last part(s) safely removed from press/die</td>
</tr>
<tr>
<td>5. Checks if part or die was damaged during removal</td>
</tr>
<tr>
<td>6. Follows all safety procedures during removal</td>
</tr>
<tr>
<td>7. Ensures part(s) clean—no surface oils, dust, dirt, or debris present</td>
</tr>
<tr>
<td>8. Checks parts for damage or flaws</td>
</tr>
</tbody>
</table>

**Competency B: Completes end-of-run documentation**

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Informs tool room (by work order, radio, or in person) of end-of-run (EOR); identifies press and die and any issues, and initiates die-removal protocol</td>
</tr>
<tr>
<td>2. Completes all EOR documentation and paperwork (or data/EOR computer entries)</td>
</tr>
<tr>
<td>3. Ensures paperwork/input accurate, correct, completed in a timely manner, and submitted to quality department or responsible party</td>
</tr>
</tbody>
</table>
4. Gathers and submits all applicable quality control inspection reports and/or variance/statistical process control (SPC) charts to quality department
   - Core

5. Ensures EOR sample part(s) and/or last strip submitted to quality department or readied for pickup (by or on die)
   - Core

6. Demonstrates accuracy, attention to detail, good communication skills, and timeliness during EOR responsibilities
   - Core

## Competency C: Removes die from press, stages for storage, and organizes die clamping devices for next setup

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensures the last strip or strip of parts was safely removed from press/die</td>
</tr>
<tr>
<td>2. Follows all safety procedures during strip removal</td>
</tr>
<tr>
<td>3. Cleans strip, ensuring no surface oils, dust, dirt, or debris present</td>
</tr>
<tr>
<td>4. Visually checks strips for damage or flaws</td>
</tr>
<tr>
<td>5. Ensures last strip clearly marked or tagged as EOR</td>
</tr>
</tbody>
</table>

## Competency D: Empties scrap bins/containers, cleans conveyors and/or chutes, and stages completed parts for pickup

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Closes and unclamps dies for removal</td>
</tr>
<tr>
<td>2. Requests die cart, towmotor, and/or crane/hoist</td>
</tr>
<tr>
<td>3. Removes all scrap chutes and applicable axillaries for next die</td>
</tr>
</tbody>
</table>

## Competency E: Returns or prepares unused material (pickup or inventory)

<table>
<thead>
<tr>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cleans the workstation</td>
</tr>
<tr>
<td>2. Removes old parts, documents, and scraps from work site and readies them for pickup</td>
</tr>
</tbody>
</table>
STATEMENT OF INDEPENDENCE

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