National Institute for Metalworking Skills, Inc.

Credentialing Achievement Record

Stamping
Level III
Set Up with Deep Draw Dies

National Institute for Metalworking Skills
3251 Old Lee Highway, Suite 205
Fairfax, VA 22030
http://nims-skills.org

METAL STAMPING CREDENTIALING PROGRAM

*LEVEL **III** **C**REDENTIALING **A**CHIEVEMENT **R**ECORD* **(CAR)**

and

Official Performance *CHECKLISTs* **(Skill Checks)**

Please print

NAME:	**Reg. No.**	**Job Title**:

Site Name:	**Site No.**

STATUS:	***Non-Completer*** ☐	***Candidate has Successfully Completed all NIMS Performance Requirements in the Following Credentialing Area:***
	Reason:	Duty Cluster Name: Date Completed:

Directions

This *Credentialing Achievement Record* (*CAR*) is the official training and performance document for the above named NIMS credentialing candidate. The CAR is used by the trainer/supervisor and candidate as a record (or log book) of individual on-the-job performance. The CAR is the *vehicle* that will allow eligible candidates to take the NIMS written credentialing examination(s). Supervisors, trainers, and candidates should take care of this record and be sure that it is accurate, kept up to date, filled out correctly, and properly stored. All information recorded in the *CAR* should be considered **CONFIDENTIAL**.

Candidates may select as many credentialing Duty Clusters as applicable to the facility or appropriate to the job. There are separate CAR booklets for each credentialing Duty Cluster. The CAR opens with a list Critical Work Activities (or experience statements) that must be acknowledged and documented. However, actual performance is assessed two ways: **1**) by fulfilling these general experience and historical statements and **2**) by an examiner administering *Skill Checks* (or performance assessments). Skill Checks required for credentialing are clearly marked with the title - **CAR SKILL CHECK**. With the exception of the Opportunity Observations required for troubleshooting and maintenance, each Skill Check must be successfully completed five times. Candidate performance is documented by a ☑ on each Examiner's *CHECKLIST*. All successful Skill Check attempts must be co-signed and dated by the trainer/supervisor and candidate. Work Activity (experiential) statements must be co-initialed by the trainer/supervisor or manager and the candidate then dated. If a particular Skill Check step or standard does not apply at your facility, check-off the applicable ***NA*** box and continue. Skill Checks may require the candidate to perform work a bit differently than your normal procedure or learn how to do something that may not be part of their typical day-to-day responsibilities. However, you may only check-off a ***NA*** box if the process-standard does not apply because the equipment or tooling is not available or the stamping process itself does not require this activity.

For additional information about administering *CAR* Skill Checks , see the CAR Administration Guide or consult with your facility Credentialing Coordinator.

METAL STAMPING CREDENTIALING PROGRAM

*LEVEL **III** **C**REDENTIALING **A**CHIEVEMENT **R**ECORD* **(CAR)**

CAR WORK ACTIVITY SIGN-OFFS AND SKILL CHECKS

****

Setup Equipment with Drawing Dies

DUTY CLUSTER - 2.8-10

Duty Cluster and Critical Work Activities	Date Completed	Supervisor Initials	Trainer Initials	Trainee Initials
Setup Equipment with Deep Drawing Dies				
Candidate has met the attendance policy of the facility for the last 12 consecutive months.				
Candidate has no company documented safety violations within the last 12 consecutive months.				
Candidate has demonstrated the ability to maintain a safe, clean and orderly work area in compliance with facility housekeeping policies and has no reported violations for a period of three (3) consecutive months.				
Candidate has demonstrated expert knowledge of material/part conformance standards and expert SPC recording requirements.				
Candidate has demonstrated leadership qualities and communication skills consistent with the position and level of responsibility.				
Candidate has demonstrated competency when directing the work of others and has provided workable advice and modest training to co-workers that has fostered an environment of continuous learning and process improvement.				
Candidate understands basic principles of deep drawing (single, double and reverse), electricity/electronics, mechanical technology, metallurgy, material handling, and fluid power systems.				
Candidate has demonstrated the ability to use prints, charts, technical drawings, and/or schematics to troubleshoot running processes, conduct in-process inspections, and perform basic corrective or preventive maintenance.				

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SKILL CHECK #1

Candidate: Registration No.:	**Date:** 199
Examiner: Examiner No.:	(For official use only) **Results** (check one): **Pass** ❑ **Yes** ❑ **No**

Work Activity

2.8-10 - Setup, Operate and Maintain Auxiliaries and Machines with Deep Drawing Dies

Performance Conditions

Setting: OJT Observations. Given a set-up plan or work order, candidate will setup, activate, adjust, test/verify, and monitor all safety systems, lubrication devices, auxiliaries, and deep drawing equipment (single, double, or reverse). Candidate will produce (operate equipment) and inspect parts (verify product quality) in the manner prescribed by the Process/Quality Plan. Given an appropriate process monitoring plan, candidate will troubleshoot problems during production runs and perform appropriate corrective or preventive maintenance.

(First of five Skill Checks)

Safety Equipment:

- ◊ PPE/PPC
- ◊ Protective Devices (hoods, guards, dust mask, signs, locks/tags, etc.)

Tools, Equipment and Materials:

- Assorted/Common Hand Tools
- Part Placement Equipment (tongs, suction cups, magnets, etc.)
- Mirror and Flashlight
- Pen/Pencils
- Calculator (optional)
- Process/Quality Plan
- Operating Instructions (if needed)
- Lubricants/Coolants (as needed)
- Lubricant Delivery Devices
- Stock/Coil and Package Containers
- Scrap Removal Tools and Containers

Measuring Instruments:

- Rules/Tape Measure
- Height Gage
- Calipers
- Micrometers
- Verniers
- Squares
- Specialty Gages
- Protractor
- Sight Gages
- Dipsticks
- Attribute and Fixture Gages

Attainment Standards

1. 100% of all procedural steps and standards, without assistance, within company-specific time limit, following all safety and plant procedures.
2. 100% conformance with all product standards and Process Plan criteria.

Trainee Directions

The above referenced tools, equipment, materials and supplies will be used to Setup, Operate, Troubleshoot and Maintain Deep-Drawing Die Equipment and Tooling . All safety and plant procedures must be followed. Both the process and final result of the process will be evaluated. Steps should be performed in the sequence, and all steps must meet the standards for successful completion.

Examiner Instructions

For successful completion of this Skill Check, the candidate must demonstrate the ability to complete the work activity under controlled assessment conditions. All work must be completed to standard.
Before administering the Skill Check:

- Read/review the *CAR Administration Guide* developed for the program.
- Ensure that you have a copy of this Skill Check for the candidate to use while he/she is working. Be sure all applicable equipment and supplies are available.

Do not provide assistance during the Skill Check. Monitor work in-progress and evaluate for ***process***. Assess the completed work for conformance with **product** criteria. Mark ***NA*** if a process/product is not appropriate.

Stop the Skill Check immediately if the candidate violates a safety regulation or procedure or if there is any possibility of personal injury or damage to equipment.

Before testing, the examiner may discuss appropriate safety requirements and loss potential issues (*i.e., Lock and Tag/Zero Energy, HAZMAT, personal protection equipment, confined space entry, compressed gas, compressed air, high voltage/pressure)*.

EXAMINER: Read aloud the *Skill Check Script* from the *CAR Administration Guide* (*verbatim*).

When the candidate indicates that he/she has completed the Skill Check or when maximum time allowed has run out, assess final product and follow the closing procedures outlined in the *CAR Administration Guide.*

Checklist

Scoring Procedures: Observe the candidate's performance for each Process Element and mark the *CHECKLIST* whether or not the standards were attained (*Do not rely on your memory).* Steps on the process side are to be marked as they are initiated. Standards are to be marked after each step has been competed.

(C) ***Critical***. Failure to meet the standard will result in Skill Check termination.

Note: The evaluator will terminate the assessment and schedule the individual for further training.

NIMS

***Examiner's CHECKLIST* — CAR SKILL CHECK #1**

Setup, Operate, and Maintain Equipment with Drawing Dies

Steps

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒ ***PRESS AND TOOLING***	**Yes**	**No**		**Yes**	**No**	***NA***
1. Stage Work Site and Prepare Press for Setup	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Work area clean and orderly (no debris, unguarded obstructions, slippery floor areas, unmanaged scrap, etc.) • Obtained and set up applicable tools, safety equipment, supplies, and documents. • Read and understood Setup Plan, Standard Operating Procedures, and/or equipment manufacturer instructions. • Setup package/part and scrap containers. • Verified availability of raw material/stock as specified in Process/Quality Plan.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
2. Prepare Die(s) for Installation	❑	❑	• Correct die(s) obtained as per Process/Quality Plan or as cross referenced to work order. **(c)** • Die, die cavity and bolster/bed are clean based on visual inspections (no dirt, rust, burrs, nicks, etc.). • Die/die assembly is not damaged based on visual inspection (no cracks, dents, holes, etc.- no loose bolts, wires, parallels, or cables, etc. - no missing features). **(c)** • Unique tooling successfully installed. • Die(s) correctly staged for installation.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
3. Install Tooling and Setup Press	❑	❑	• Ram/slide, bolster, and die/die assembly clean, deburred, clear of scrap, and showing no damage (includes knockouts, if applicable). **(c)** • Accessories removed as needed. • Die/die assembly checked, aligned, and securely clamped (includes installation of any components i.e., knockouts, bolts, etc.). **(c)** • Performed necessary lubrication and/or counter balancing activities while inspecting die. • Ram/slide manipulation was performed safely and correctly to shut height and tension requirements (no damage to press, shoe, die/assembly, casting, ram, clamps, no loose bolts, etc.). **(c)** • Demonstrated proficiency estimating, adjusting, and setting final shut height. • Followed safety procedures/used safety devices. **(c)**	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Process continued on next page

			• Verified clearances (stroke + minimum height allowance) to ensure smoothness of operation. **(c)**	❑	❑	❑
			• Press will maintain a smooth operation and meet clearance requirements even after any knockout, feeder, or CAM adjustments.	❑	❑	❑
			• Counters reset and functional (if applicable).	❑	❑	❑
			• Press inspected for service items/maintenance (pressure/tonnage, lubrication, repair, calibration, etc.).	❑	❑	❑
			• Identified and responded to/corrected problems (see troubleshooting and maintenance sections).	❑	❑	❑
			• Material/stock lubricated and/or advanced to starting position (see coil setup auxiliaries section).	❑	❑	❑
			• Inspection gages and quality control instruments set up for production or hand-off.	❑	❑	❑
			• Work cell organized, press/press area clean, and all safety devices, alarms, sensors, and guards set (or installed) and verified for function. **(c)**	❑	❑	❑

☞ *Skill Check Continued on Next Page*

Steps

SETUP and OPERATION PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
⇒ *AUXILIARIES AND PRESS*						
1. Request and Verify Material/Stock			• Followed Process/Quality Plan and/or Standard Operating Procedures. ❑ • Material matched process specification criteria (ID code, type, SO number, width, thickness, clad, etc.) ❑ • Material visually inspected for adverse conditions (rust, surface lamination, tensile strength, coil break, stretch marks, etc.). ❑ • Sufficient material/stock staged for production. ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Prepare and Adjust Uncoiler **(Coil-fed Operations Only)**			• Material correctly aligned and mandrels/keepers or cradle accepts ID/OD or width of coil. ❑ • Coil secured and containing bands safely removed. ❑ • Verified uncoiler safety devices for function. ❑ • Material advanced to next operation. ❑ • Obtained correct feed speed and set brake tension. • Adjusted loop control. ❑ • Demonstrated ability and safety during loading (rigging, crane operations, load capacity, etc.). ❑ • Demonstrated ability when using threading tables. ❑ • Demonstrated proficiency using controls (Modes of Operation). ❑ • Setup performed according to Standard Operating Procedure(s) and/or Process/Setup Plan. ❑ • Equipment checked for service items/maintenance. ❑ • Identified and responded to problems (see troubleshooting and maintenance sections). ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
3. Prepare and Adjust Straightener **(Coil-fed Operations Only)**			• Straightener accepts coil. ❑ • Material properly aligned and secured (adjusted pinchroll(s), entrance guide(s), loop controls, etc.). ❑ • Set parameters of straightener. ❑ • Obtained correct speed ratio for smooth, efficient, and continuous production. ❑ • Equipment checked for service items/maintenance. ❑ • Identified and responded to problems (see troubleshooting and maintenance sections). ❑ • Demonstrated proficiency using controls (Modes of Operation). • Straightener setup performed according to Standard Operating procedure(s) and/or Process/Setup Plan. ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
4. Prepare, Load, and Adjust Feeder **(Coil-fed Operations Only)**	❑	❑	• Feed parameters set (material thickness/width, length, timing, pass-line, pilot/feed release/height, etc.). • Speed of feed matches press speed. • Coil loaded and aligned with die(s). • Feeder set up, activated, and verified for safety. • Equipment checked for service items/maintenance. • Coil advanced smoothly into die/die assembly (material did not bind, buckle, wrinkle, slip, or stretch). • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls. • Feeder set up performed according to Standard Operating Procedure(s) and/or Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
5. Make a Quality Piece Part (Jog/Inch Mode)			• Machine started/re-started and adjusted/re-adjusted for production or inch mode/jog stroke. • First-run piece part stamped according to Process/Quality Plan. • Material/stock passed smoothly through die assembly or stations (material or part no longer in die). • Part safely removed from guarded area. • Part attributes comply with quality characteristic standards based visual inspections (includes no missing or incomplete features, stretch marks, etc.). • Part variables conformed to specified dimensional +/-tolerances, control limits and SPC measurement standards (instrument or gage inspections required). • Demonstrated accuracy when using measuring instruments or hand-held gages. • Scrap exited smoothly and was properly segregated, stored or contained (no scrap/slugs present in die, shoe or part containers). No excessive scrap present. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using/setting controls. • Equipment production ready and verified for safety.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
6. Produce Parts (*Operate Equipment for at least 15 minutes*)	❑	❑	• Attentively monitored process (pad pressures, lubricants/coolants, inputs/payouts, sensors, workholders, tooling, etc.) and identified/responded to problems. • Identified defective or non-compliance parts without contaminating quality parts discharged or packaged. **(c)** • Equipment functioning properly and parts manufactured within productivity expectations. • Quality parts produced on an on-going, successive,	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑

			and continuous basis. Press prepared for hand-off.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed proficiently according to Process/Quality Plan, Setup Plan, SOP and/or Work Order instructions.
- **b.** ❑ All systems and components functioning properly and press continuously making good parts within (%) productivity standards. No cross-contamination.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, information sheets, reports, work orders, labels, and /or in log books.
- **d**. ❑ Candidate demonstrated ability to deal with problems pro-actively and decisively.
- **e.** ❑ Candidate demonstrated ability to link cause and effect to isolate and correct problems or make process improvements.
- **f.** ❑ All safety and plant procedures have been followed and work area was left clean.

COMMENTS

Candidate/Examiner: _____

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Signatures: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

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***Examiner's CHECKLIST* — CAR SKILL CHECK #2**

Setup, Operate, and Maintain Equipment with Drawing Dies

Steps

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒ ***PRESS AND TOOLING***	**Yes**	**No**		**Yes**	**No**	***NA***
1. Stage Work Site and Prepare Press for Setup	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Work area clean and orderly (no debris, unguarded obstructions, slippery floor areas, unmanaged scrap, etc.) • Obtained and set up applicable tools, safety equipment, supplies, and documents. • Read and understood Setup Plan, Standard Operating Procedures, and/or equipment manufacturer instructions. • Setup package/part and scrap containers. • Verified availability of raw material/stock as specified in Process/Quality Plan.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
2. Prepare Die(s) for Installation	❑	❑	• Correct die(s) obtained as per Process/Quality Plan or as cross referenced to work order. **(c)** • Die, die cavity and bolster/bed are clean based on visual inspections (no dirt, rust, burrs, nicks, etc.). • Die/die assembly is not damaged based on visual inspection (no cracks, dents, holes, etc.- no loose bolts, wires, parallels, or cables, etc. - no missing features). **(c)** • Unique tooling successfully installed. • Die(s) correctly staged for installation.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
3. Install Tooling and Setup Press	❑	❑	• Ram/slide, bolster, and die/die assembly clean, deburred, clear of scrap, and showing no damage (includes knockouts, if applicable). **(c)** • Accessories removed as needed. • Die/die assembly checked, aligned, and securely clamped (includes installation of any components i.e., knockouts, bolts, etc.). **(c)** • Performed necessary lubrication and/or counter balancing activities while inspecting die. • Ram/slide manipulation was performed safely and correctly to shut height and tension requirements (no damage to press, shoe, die/assembly, casting, ram, clamps, no loose bolts, etc.). **(c)** • Demonstrated proficiency estimating, adjusting, and setting final shut height. • Followed safety procedures/used safety devices. **(c)**	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Process continued on next page

			• Verified clearances (stroke + minimum height allowance) to ensure smoothness of operation. **(c)**	❑	❑	❑
			• Press will maintain a smooth operation and meet clearance requirements even after any knockout, feeder, or CAM adjustments.	❑	❑	❑
			• Counters reset and functional (if applicable).	❑	❑	❑
			• Press inspected for service items/maintenance (pressure/tonnage, lubrication, repair, calibration, etc.).	❑	❑	❑
			• Identified and responded to/corrected problems (see troubleshooting and maintenance sections).	❑	❑	❑
			• Material/stock lubricated and/or advanced to starting position (see coil setup auxiliaries section).	❑	❑	❑
			• Inspection gages and quality control instruments set up for production or hand-off.	❑	❑	❑
			• Work cell organized, press/press area clean, and all safety devices, alarms, sensors, and guards set (or installed) and verified for function. **(c)**	❑	❑	❑

☞ *Skill Check Continued on Next Page*

Steps

SETUP and OPERATION PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
⇒ *AUXILIARIES AND PRESS*						
1. Request and Verify Material/Stock			• Followed Process/Quality Plan and/or Standard Operating Procedures. • Material matched process specification criteria (ID code, type, SO number, width, thickness, clad, etc.) • Material visually inspected for adverse conditions (rust, surface lamination, tensile strength, coil break, stretch marks, etc.). • Sufficient material/stock staged for production.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Prepare and Adjust Uncoiler **(Coil-fed Operations Only)**			• Material correctly aligned and mandrels/keepers or cradle accepts ID/OD or width of coil. • Coil secured and containing bands safely removed. • Verified uncoiler safety devices for function. • Material advanced to next operation. • Obtained correct feed speed and set brake tension. • Adjusted loop control. • Demonstrated ability and safety during loading (rigging, crane operations, load capacity, etc.). • Demonstrated ability when using threading tables. • Demonstrated proficiency using controls (Modes of Operation). • Setup performed according to Standard Operating Procedure(s) and/or Process/Setup Plan. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections).	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
3. Prepare and Adjust Straightener **(Coil-fed Operations Only)**			• Straightener accepts coil. • Material properly aligned and secured (adjusted pinchroll(s), entrance guide(s), loop controls, etc.). • Set parameters of straightener. • Obtained correct speed ratio for smooth, efficient, and continuous production. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls (Modes of Operation). • Straightener setup performed according to Standard Operating procedure(s) and/or Process/Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
4. Prepare, Load, and Adjust Feeder **(Coil-fed Operations Only)**	❑	❑	• Feed parameters set (material thickness/width, length, timing, pass-line, pilot/feed release/height, etc.). • Speed of feed matches press speed. • Coil loaded and aligned with die(s). • Feeder set up, activated, and verified for safety. • Equipment checked for service items/maintenance. • Coil advanced smoothly into die/die assembly (material did not bind, buckle, wrinkle, slip, or stretch). • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls. • Feeder set up performed according to Standard Operating Procedure(s) and/or Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
5. Make a Quality Piece Part (Jog/Inch Mode)			• Machine started/re-started and adjusted/re-adjusted for production or inch mode/jog stroke. • First-run piece part stamped according to Process/Quality Plan. • Material/stock passed smoothly through die assembly or stations (material or part no longer in die). • Part safely removed from guarded area. • Part attributes comply with quality characteristic standards based visual inspections (includes no missing or incomplete features, stretch marks, etc.). • Part variables conformed to specified dimensional +/-tolerances, control limits and SPC measurement standards (instrument or gage inspections required). • Demonstrated accuracy when using measuring instruments or hand-held gages. • Scrap exited smoothly and was properly segregated, stored or contained (no scrap/slugs present in die, shoe or part containers). No excessive scrap present. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using/setting controls. • Equipment production ready and verified for safety.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
6. Produce Parts (*Operate Equipment for at least 15 minutes*)	❑	❑	• Attentively monitored process (pad pressures, lubricants/coolants, inputs/payouts, sensors, workholders, tooling, etc.) and identified/responded to problems. • Identified defective or non-compliance parts without contaminating quality parts discharged or packaged. **(c)** • Equipment functioning properly and parts manufactured within productivity expectations. • Quality parts produced on an on-going, successive,	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑

			and continuous basis. Press prepared for hand-off.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed proficiently according to Process/Quality Plan, Setup Plan, SOP and/or Work Order instructions.
- **b.** ❑ All systems and components functioning properly and press continuously making good parts within (%) productivity standards. No cross-contamination.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, information sheets, reports, work orders, labels, and /or in log books.
- **d**. ❑ Candidate demonstrated ability to deal with problems pro-actively and decisively.
- **e.** ❑ Candidate demonstrated ability to link cause and effect to isolate and correct problems or make process improvements.
- **f.** ❑ All safety and plant procedures have been followed and work area was left clean.

COMMENTS

Candidate/Examiner: _____

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Signatures: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

Examiner's CHECKLIST — CAR SKILL CHECK #3

Setup, Operate, and Maintain Equipment with Drawing Dies

Steps

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒ *PRESS AND TOOLING*	Yes	No		Yes	No	*NA*
1. Stage Work Site and Prepare Press for Setup	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Work area clean and orderly (no debris, unguarded obstructions, slippery floor areas, unmanaged scrap, etc.) • Obtained and set up applicable tools, safety equipment, supplies, and documents. • Read and understood Setup Plan, Standard Operating Procedures, and/or equipment manufacturer instructions. • Setup package/part and scrap containers. • Verified availability of raw material/stock as specified in Process/Quality Plan.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
2. Prepare Die(s) for Installation	❑	❑	• Correct die(s) obtained as per Process/Quality Plan or as cross referenced to work order. **(c)** • Die, die cavity and bolster/bed are clean based on visual inspections (no dirt, rust, burrs, nicks, etc.). • Die/die assembly is not damaged based on visual inspection (no cracks, dents, holes, etc.- no loose bolts, wires, parallels, or cables, etc. - no missing features). **(c)** • Unique tooling successfully installed. • Die(s) correctly staged for installation.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
3. Install Tooling and Setup Press	❑	❑	• Ram/slide, bolster, and die/die assembly clean, deburred, clear of scrap, and showing no damage (includes knockouts, if applicable). **(c)** • Accessories removed as needed. • Die/die assembly checked, aligned, and securely clamped (includes installation of any components i.e., knockouts, bolts, etc.). **(c)** • Performed necessary lubrication and/or counter balancing activities while inspecting die. • Ram/slide manipulation was performed safely and correctly to shut height and tension requirements (no damage to press, shoe, die/assembly, casting, ram, clamps, no loose bolts, etc.). **(c)** • Demonstrated proficiency estimating, adjusting, and setting final shut height. • Followed safety procedures/used safety devices. **(c)**	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Process continued on next page

			• Verified clearances (stroke + minimum height allowance) to ensure smoothness of operation. **(c)**	❑	❑	❑
			• Press will maintain a smooth operation and meet clearance requirements even after any knockout, feeder, or CAM adjustments.	❑	❑	❑
			• Counters reset and functional (if applicable).	❑	❑	❑
			• Press inspected for service items/maintenance (pressure/tonnage, lubrication, repair, calibration, etc.).	❑	❑	❑
			• Identified and responded to/corrected problems (see troubleshooting and maintenance sections).	❑	❑	❑
			• Material/stock lubricated and/or advanced to starting position (see coil setup auxiliaries section).	❑	❑	❑
			• Inspection gages and quality control instruments set up for production or hand-off.	❑	❑	❑
			• Work cell organized, press/press area clean, and all safety devices, alarms, sensors, and guards set (or installed) and verified for function. **(c)**	❑	❑	❑

☞ *Skill Check Continued on Next Page*

Steps

SETUP and OPERATION PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
⇒ *AUXILIARIES AND PRESS*						
1. Request and Verify Material/Stock			• Followed Process/Quality Plan and/or Standard Operating Procedures. • Material matched process specification criteria (ID code, type, SO number, width, thickness, clad, etc.) • Material visually inspected for adverse conditions (rust, surface lamination, tensile strength, coil break, stretch marks, etc.). • Sufficient material/stock staged for production.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Prepare and Adjust Uncoiler **(Coil-fed Operations Only)**			• Material correctly aligned and mandrels/keepers or cradle accepts ID/OD or width of coil. • Coil secured and containing bands safely removed. • Verified uncoiler safety devices for function. • Material advanced to next operation. • Obtained correct feed speed and set brake tension. • Adjusted loop control. • Demonstrated ability and safety during loading (rigging, crane operations, load capacity, etc.). • Demonstrated ability when using threading tables. • Demonstrated proficiency using controls (Modes of Operation). • Setup performed according to Standard Operating Procedure(s) and/or Process/Setup Plan. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections).	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
3. Prepare and Adjust Straightener **(Coil-fed Operations Only)**			• Straightener accepts coil. • Material properly aligned and secured (adjusted pinchroll(s), entrance guide(s), loop controls, etc.). • Set parameters of straightener. • Obtained correct speed ratio for smooth, efficient, and continuous production. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls (Modes of Operation). • Straightener setup performed according to Standard Operating procedure(s) and/or Process/Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
4. Prepare, Load, and Adjust Feeder **(Coil-fed Operations Only)**	❑	❑	• Feed parameters set (material thickness/width, length, timing, pass-line, pilot/feed release/height, etc.). • Speed of feed matches press speed. • Coil loaded and aligned with die(s). • Feeder set up, activated, and verified for safety. • Equipment checked for service items/maintenance. • Coil advanced smoothly into die/die assembly (material did not bind, buckle, wrinkle, slip, or stretch). • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls. • Feeder set up performed according to Standard Operating Procedure(s) and/or Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
5. Make a Quality Piece Part (Jog/Inch Mode)			• Machine started/re-started and adjusted/re-adjusted for production or inch mode/jog stroke. • First-run piece part stamped according to Process/Quality Plan. • Material/stock passed smoothly through die assembly or stations (material or part no longer in die). • Part safely removed from guarded area. • Part attributes comply with quality characteristic standards based visual inspections (includes no missing or incomplete features, stretch marks, etc.). • Part variables conformed to specified dimensional +/-tolerances, control limits and SPC measurement standards (instrument or gage inspections required). • Demonstrated accuracy when using measuring instruments or hand-held gages. • Scrap exited smoothly and was properly segregated, stored or contained (no scrap/slugs present in die, shoe or part containers). No excessive scrap present. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using/setting controls. • Equipment production ready and verified for safety.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
6. Produce Parts (*Operate Equipment for at least 15 minutes*)	❑	❑	• Attentively monitored process (pad pressures, lubricants/coolants, inputs/payouts, sensors, workholders, tooling, etc.) and identified/responded to problems. • Identified defective or non-compliance parts without contaminating quality parts discharged or packaged. **(c)** • Equipment functioning properly and parts manufactured within productivity expectations. • Quality parts produced on an on-going, successive,	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑

			and continuous basis. Press prepared for hand-off.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed proficiently according to Process/Quality Plan, Setup Plan, SOP and/or Work Order instructions.
- **b.** ❑ All systems and components functioning properly and press continuously making good parts within (%) productivity standards. No cross-contamination.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, information sheets, reports, work orders, labels, and /or in log books.
- **d**. ❑ Candidate demonstrated ability to deal with problems pro-actively and decisively.
- **e.** ❑ Candidate demonstrated ability to link cause and effect to isolate and correct problems or make process improvements.
- **f.** ❑ All safety and plant procedures have been followed and work area was left clean.

COMMENTS

Candidate/Examiner: _____

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Signatures: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

NIMS

***Examiner's CHECKLIST* — CAR SKILL CHECK #4**

Setup, Operate, and Maintain Equipment with Drawing Dies

Steps

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒ ***PRESS AND TOOLING***	**Yes**	**No**		**Yes**	**No**	***NA***
1. Stage Work Site and Prepare Press for Setup	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Work area clean and orderly (no debris, unguarded obstructions, slippery floor areas, unmanaged scrap, etc.) • Obtained and set up applicable tools, safety equipment, supplies, and documents. • Read and understood Setup Plan, Standard Operating Procedures, and/or equipment manufacturer instructions. • Setup package/part and scrap containers. • Verified availability of raw material/stock as specified in Process/Quality Plan.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
2. Prepare Die(s) for Installation	❑	❑	• Correct die(s) obtained as per Process/Quality Plan or as cross referenced to work order. **(c)** • Die, die cavity and bolster/bed are clean based on visual inspections (no dirt, rust, burrs, nicks, etc.). • Die/die assembly is not damaged based on visual inspection (no cracks, dents, holes, etc.- no loose bolts, wires, parallels, or cables, etc. - no missing features). **(c)** • Unique tooling successfully installed. • Die(s) correctly staged for installation.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑
3. Install Tooling and Setup Press	❑	❑	• Ram/slide, bolster, and die/die assembly clean, deburred, clear of scrap, and showing no damage (includes knockouts, if applicable). **(c)** • Accessories removed as needed. • Die/die assembly checked, aligned, and securely clamped (includes installation of any components i.e., knockouts, bolts, etc.). **(c)** • Performed necessary lubrication and/or counter balancing activities while inspecting die. • Ram/slide manipulation was performed safely and correctly to shut height and tension requirements (no damage to press, shoe, die/assembly, casting, ram, clamps, no loose bolts, etc.). **(c)** • Demonstrated proficiency estimating, adjusting, and setting final shut height. • Followed safety procedures/used safety devices. **(c)**	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Process continued on next page

			• Verified clearances (stroke + minimum height allowance) to ensure smoothness of operation. **(c)**	❑	❑	❑
			• Press will maintain a smooth operation and meet clearance requirements even after any knockout, feeder, or CAM adjustments.	❑	❑	❑
			• Counters reset and functional (if applicable).	❑	❑	❑
			• Press inspected for service items/maintenance (pressure/tonnage, lubrication, repair, calibration, etc.).	❑	❑	❑
			• Identified and responded to/corrected problems (see troubleshooting and maintenance sections).	❑	❑	❑
			• Material/stock lubricated and/or advanced to starting position (see coil setup auxiliaries section).	❑	❑	❑
			• Inspection gages and quality control instruments set up for production or hand-off.	❑	❑	❑
			• Work cell organized, press/press area clean, and all safety devices, alarms, sensors, and guards set (or installed) and verified for function. **(c)**	❑	❑	❑

☞ *Skill Check Continued on Next Page*

Steps

SETUP and OPERATION PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
⇒ *AUXILIARIES AND PRESS*						
1. Request and Verify Material/Stock			• Followed Process/Quality Plan and/or Standard Operating Procedures. • Material matched process specification criteria (ID code, type, SO number, width, thickness, clad, etc.) • Material visually inspected for adverse conditions (rust, surface lamination, tensile strength, coil break, stretch marks, etc.). • Sufficient material/stock staged for production.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Prepare and Adjust Uncoiler **(Coil-fed Operations Only)**			• Material correctly aligned and mandrels/keepers or cradle accepts ID/OD or width of coil. • Coil secured and containing bands safely removed. • Verified uncoiler safety devices for function. • Material advanced to next operation. • Obtained correct feed speed and set brake tension. • Adjusted loop control. • Demonstrated ability and safety during loading (rigging, crane operations, load capacity, etc.). • Demonstrated ability when using threading tables. • Demonstrated proficiency using controls (Modes of Operation). • Setup performed according to Standard Operating Procedure(s) and/or Process/Setup Plan. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections).	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
3. Prepare and Adjust Straightener **(Coil-fed Operations Only)**			• Straightener accepts coil. • Material properly aligned and secured (adjusted pinchroll(s), entrance guide(s), loop controls, etc.). • Set parameters of straightener. • Obtained correct speed ratio for smooth, efficient, and continuous production. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls (Modes of Operation). • Straightener setup performed according to Standard Operating procedure(s) and/or Process/Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
4. Prepare, Load, and Adjust Feeder **(Coil-fed Operations Only)**	❑	❑	• Feed parameters set (material thickness/width, length, timing, pass-line, pilot/feed release/height, etc.). • Speed of feed matches press speed. • Coil loaded and aligned with die(s). • Feeder set up, activated, and verified for safety. • Equipment checked for service items/maintenance. • Coil advanced smoothly into die/die assembly (material did not bind, buckle, wrinkle, slip, or stretch). • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls. • Feeder set up performed according to Standard Operating Procedure(s) and/or Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
5. Make a Quality Piece Part (Jog/Inch Mode)			• Machine started/re-started and adjusted/re-adjusted for production or inch mode/jog stroke. • First-run piece part stamped according to Process/Quality Plan. • Material/stock passed smoothly through die assembly or stations (material or part no longer in die). • Part safely removed from guarded area. • Part attributes comply with quality characteristic standards based visual inspections (includes no missing or incomplete features, stretch marks, etc.). • Part variables conformed to specified dimensional +/-tolerances, control limits and SPC measurement standards (instrument or gage inspections required). • Demonstrated accuracy when using measuring instruments or hand-held gages. • Scrap exited smoothly and was properly segregated, stored or contained (no scrap/slugs present in die, shoe or part containers). No excessive scrap present. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using/setting controls. • Equipment production ready and verified for safety.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
6. Produce Parts (*Operate Equipment for at least 15 minutes*)	❑	❑	• Attentively monitored process (pad pressures, lubricants/coolants, inputs/payouts, sensors, workholders, tooling, etc.) and identified/responded to problems. • Identified defective or non-compliance parts without contaminating quality parts discharged or packaged. **(c)** • Equipment functioning properly and parts manufactured within productivity expectations. • Quality parts produced on an on-going, successive,	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑

			and continuous basis. Press prepared for hand-off.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed proficiently according to Process/Quality Plan, Setup Plan, SOP and/or Work Order instructions.
- **b.** ❑ All systems and components functioning properly and press continuously making good parts within (%) productivity standards. No cross-contamination.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, information sheets, reports, work orders, labels, and /or in log books.
- **d**. ❑ Candidate demonstrated ability to deal with problems pro-actively and decisively.
- **e.** ❑ Candidate demonstrated ability to link cause and effect to isolate and correct problems or make process improvements.
- **f.** ❑ All safety and plant procedures have been followed and work area was left clean.

COMMENTS

Candidate/Examiner: _____

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Signatures: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

***Examiner's CHECKLIST* — CAR SKILL CHECK #5**

Setup, Operate, and Maintain Equipment with Drawing Dies

Steps

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒ ***PRESS AND TOOLING***	**Yes**	**No**		**Yes**	**No**	***NA***
1. Stage Work Site and Prepare Press for Setup	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Work area clean and orderly (no debris, unguarded obstructions, slippery floor areas, unmanaged scrap, etc.) • Obtained and set up applicable tools, safety equipment, supplies, and documents. • Read and understood Setup Plan, Standard Operating Procedures, and/or equipment manufacturer instructions. • Setup package/part and scrap containers. • Verified availability of raw material/stock as specified in Process/Quality Plan.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
2. Prepare Die(s) for Installation	❑	❑	• Correct die(s) obtained as per Process/Quality Plan or as cross referenced to work order. **(c)** • Die, die cavity and bolster/bed are clean based on visual inspections (no dirt, rust, burrs, nicks, etc.). • Die/die assembly is not damaged based on visual inspection (no cracks, dents, holes, etc.- no loose bolts, wires, parallels, or cables, etc. - no missing features). **(c)** • Unique tooling successfully installed. • Die(s) correctly staged for installation.	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑
3. Install Tooling and Setup Press	❑	❑	• Ram/slide, bolster, and die/die assembly clean, deburred, clear of scrap, and showing no damage (includes knockouts, if applicable). **(c)** • Accessories removed as needed. • Die/die assembly checked, aligned, and securely clamped (includes installation of any components i.e., knockouts, bolts, etc.). **(c)** • Performed necessary lubrication and/or counter balancing activities while inspecting die. • Ram/slide manipulation was performed safely and correctly to shut height and tension requirements (no damage to press, shoe, die/assembly, casting, ram, clamps, no loose bolts, etc.). **(c)** • Demonstrated proficiency estimating, adjusting, and setting final shut height. • Followed safety procedures/used safety devices. **(c)**	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Process continued on next page

			• Verified clearances (stroke + minimum height allowance) to ensure smoothness of operation. **(c)**	❑	❑	❑
			• Press will maintain a smooth operation and meet clearance requirements even after any knockout, feeder, or CAM adjustments.	❑	❑	❑
			• Counters reset and functional (if applicable).	❑	❑	❑
			• Press inspected for service items/maintenance (pressure/tonnage, lubrication, repair, calibration, etc.).	❑	❑	❑
			• Identified and responded to/corrected problems (see troubleshooting and maintenance sections).	❑	❑	❑
			• Material/stock lubricated and/or advanced to starting position (see coil setup auxiliaries section).	❑	❑	❑
			• Inspection gages and quality control instruments set up for production or hand-off.	❑	❑	❑
			• Work cell organized, press/press area clean, and all safety devices, alarms, sensors, and guards set (or installed) and verified for function. **(c)**	❑	❑	❑

☞ *Skill Check Continued on Next Page*

Steps

SETUP and OPERATION PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
⇒ *AUXILIARIES AND PRESS*						
1. Request and Verify Material/Stock			• Followed Process/Quality Plan and/or Standard Operating Procedures. • Material matched process specification criteria (ID code, type, SO number, width, thickness, clad, etc.) • Material visually inspected for adverse conditions (rust, surface lamination, tensile strength, coil break, stretch marks, etc.). • Sufficient material/stock staged for production.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Prepare and Adjust Uncoiler **(Coil-fed Operations Only)**			• Material correctly aligned and mandrels/keepers or cradle accepts ID/OD or width of coil. • Coil secured and containing bands safely removed. • Verified uncoiler safety devices for function. • Material advanced to next operation. • Obtained correct feed speed and set brake tension. • Adjusted loop control. • Demonstrated ability and safety during loading (rigging, crane operations, load capacity, etc.). • Demonstrated ability when using threading tables. • Demonstrated proficiency using controls (Modes of Operation). • Setup performed according to Standard Operating Procedure(s) and/or Process/Setup Plan. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections).	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
3. Prepare and Adjust Straightener **(Coil-fed Operations Only)**			• Straightener accepts coil. • Material properly aligned and secured (adjusted pinchroll(s), entrance guide(s), loop controls, etc.). • Set parameters of straightener. • Obtained correct speed ratio for smooth, efficient, and continuous production. • Equipment checked for service items/maintenance. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls (Modes of Operation). • Straightener setup performed according to Standard Operating procedure(s) and/or Process/Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	NA
4. Prepare, Load, and Adjust Feeder **(Coil-fed Operations Only)**	❑	❑	• Feed parameters set (material thickness/width, length, timing, pass-line, pilot/feed release/height, etc.). • Speed of feed matches press speed. • Coil loaded and aligned with die(s). • Feeder set up, activated, and verified for safety. • Equipment checked for service items/maintenance. • Coil advanced smoothly into die/die assembly (material did not bind, buckle, wrinkle, slip, or stretch). • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using controls. • Feeder set up performed according to Standard Operating Procedure(s) and/or Setup Plan.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
5. Make a Quality Piece Part (Jog/Inch Mode)			• Machine started/re-started and adjusted/re-adjusted for production or inch mode/jog stroke. • First-run piece part stamped according to Process/Quality Plan. • Material/stock passed smoothly through die assembly or stations (material or part no longer in die). • Part safely removed from guarded area. • Part attributes comply with quality characteristic standards based visual inspections (includes no missing or incomplete features, stretch marks, etc.). • Part variables conformed to specified dimensional +/-tolerances, control limits and SPC measurement standards (instrument or gage inspections required). • Demonstrated accuracy when using measuring instruments or hand-held gages. • Scrap exited smoothly and was properly segregated, stored or contained (no scrap/slugs present in die, shoe or part containers). No excessive scrap present. • Identified and responded to problems (see troubleshooting and maintenance sections). • Demonstrated proficiency using/setting controls. • Equipment production ready and verified for safety.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
6. Produce Parts (*Operate Equipment for at least 15 minutes*)	❑	❑	• Attentively monitored process (pad pressures, lubricants/coolants, inputs/payouts, sensors, workholders, tooling, etc.) and identified/responded to problems. • Identified defective or non-compliance parts without contaminating quality parts discharged or packaged. **(c)** • Equipment functioning properly and parts manufactured within productivity expectations. • Quality parts produced on an on-going, successive,	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑

			and continuous basis. Press prepared for hand-off.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed proficiently according to Process/Quality Plan, Setup Plan, SOP and/or Work Order instructions.
- **b.** ❑ All systems and components functioning properly and press continuously making good parts within (%) productivity standards. No cross-contamination.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, information sheets, reports, work orders, labels, and /or in log books.
- **d**. ❑ Candidate demonstrated ability to deal with problems pro-actively and decisively.
- **e.** ❑ Candidate demonstrated ability to link cause and effect to isolate and correct problems or make process improvements.
- **f.** ❑ All safety and plant procedures have been followed and work area was left clean.

COMMENTS

Candidate/Examiner: _____

_____

_____

_____

Signatures: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

2.8-2.10 - CAR SKILL CHECK SUMMARY

Critical Work Activities and Skill Checks Completed	Date Completed
Setup Equipment with Deep Drawing Dies	
Successful Skill Check Attempt #1	
Successful Skill Check Attempt #2	
Successful Skill Check Attempt #3	
Successful Skill Check Attempt #4	
Successful Skill Check Attempt #5	

Opportunity Observations

⇒ TROUBLESHOOT PRESS, TOOLING AND AUXILIARIES	*Candidate must successfully react to/demonstrate at least <u>five</u> (5) of the following troubleshooting situations to be credentialed in the Duty Cluster*	Successful Yes 👍	Not Successful 👎
Troubleshoot Running Process	1. Responded to a double-hit situation and successfully isolated the cause of the problem.	1. ❑	1. ❑
	2. Responded to broken tooling and correctly determined the cause of breakage.	2. ❑	2. ❑
	3. Identified defects in raw material/stock, located defective area(s), and implemented corrective actions.	3. ❑	3. ❑
	4. Responded to non-conforming part dimensions during a production run and successfully isolated the cause of the problem.	4. ❑	4. ❑
	5. Responded to damaged parts or quality non-conformance conditions during a production run and successfully isolated the potential cause(s) of the problem.	5. ❑	5. ❑
	6. Detected variations in material thickness, isolated areas of non-conformance, and correctly diagnosed the cause of the problem.	6. ❑	6. ❑
	7. Responded to double thickness conditions, identified problem area(s), and successfully isolated the cause of the problem.	7. ❑	7. ❑
	8. Responded to a press overload situation or E-Stop, analyzed potential problem areas, and successfully determined cause of the overload or stoppage.	8. ❑	8. ❑
	9. Detected a material alignment problem, isolated the cause of the mis-alignment, and performed corrective actions.	9. ❑	9. ❑
	10. Identified mis-alignment of straighteners, evaluated problem areas, and successfully isolated the cause of the problem.	10. ❑	10. ❑
	11. Detected speed variations on feeders, uncoilers, or straighteners; determined problem area; and successfully isolated the cause of the problem.	11. ❑	11. ❑
	12. Responded to loop sensor faults and successfully isolated the problem.	12. ❑	12. ❑
	13. Responded to a conveyor, part handler, or transfer device failure and correctly determined cause of the problem.	13. ❑	13. ❑
	14. Identified irregular (*high/low*) pressure/temperature/flow variations, isolated the cause of the problem, and performed corrective actions.	14. ❑	14. ❑

Opportunity observations continued	**Opportunity Observations**	**Successful**	**Not Successful**
⇒ **MAINTAIN PRESS, TOOLING, OR AUXILIARIES**	***Candidate must successfully demonstrate at least 10 of the following maintenance activities to be credentialed in the Duty Cluster***	**Yes** 👍	👎
Perform Corrective or Preventive Maintenance on Equipment	1. Removed taps and installed new or replacement taps.	1. ❑	1. ❑
	2. Bleed lines and valves.	2. ❑	2. ❑
	3. Changed and adjusted shut height (in-process adjustment).	3. ❑	3. ❑
	4. Dressed or replaced electrodes on a welder.	4. ❑	4. ❑
	5. Cleaned scrap from tee slots, holes, etc.	5. ❑	5. ❑
	6. Cleaned a bolster or ram/slide.	6. ❑	6. ❑
	7. Pulled, cleaned and re-installed/mounted a die/assembly.	7. ❑	7. ❑
	8. Replaced damaged/defective pins or key.	8. ❑	8. ❑
	9. Locked and tagged-out equipment (Zero energy on mechanical and electrical).	9. ❑	9. ❑
	10. Removed, cleaned, and re-installed a filter.	10. ❑	10. ❑
	11. Replaced a hose or tubing.	11. ❑	11. ❑
	12. Removed, cleaned or unplugged, and re-installed a valve.	12. ❑	12. ❑
	13. Removed a damaged or non-functioning valve and replaced it with a new or rebuilt valve.	13. ❑	13. ❑
	14. Corrected and adjusted/re-set timing (in-process adjustment).	14. ❑	14. ❑
	15. Corrected, adjusted/re-set, and controlled feeds, speeds and/or flow rates (in-process adjustments).	15. ❑	15. ❑
	16. Polished or cleaned rollers.	16. ❑	16. ❑
	17. Repositioned stock/raw material (in-process adjustment).	17. ❑	17. ❑
	18. Changed/replaced a low-voltage fuse or breaker.	18. ❑	18. ❑
	19. Tightened strippers.	19. ❑	19. ❑
	20. Tightened parallels.	20. ❑	20. ❑
	21. Replaced a defective workholding device and it verified for safety.	21. ❑	21. ❑
	22. Verified calibration of sensors, monitors or switches.	22. ❑	22. ❑
	23. Changed/replaced a limit or proximity switch.	23. ❑	23. ❑
	24. Replaced and set a conveyor or material handling belt.	24. ❑	24. ❑
	25. Changed and adjusted a drive belt or chain.	25. ❑	25. ❑
	26. Adjusted pressure/temperature regulator (in-process adjustment).	26. ❑	26. ❑
	27. Filled/refilled lubrication or cooling devices/reservoirs.	27. ❑	27. ❑
	28. Lubricated/greased equipment manually (PM).	28. ❑	28. ❑
	29. Replaced a control panel light or LED.	29. ❑	29. ❑
	30. Successfully conducted a titration test.	30. ❑	30. ❑
	31. Successfully performed a refractometer (viscosity) analysis.	31. ❑	31. ❑
	32. Successfully tested material for hardness (e.g., Rockwell test)	32. ❑	32. ❑

	33. Successfully tested tensile of raw material or a part (e.g., "pull test")	33. ❑	33. ❑
	34. Successfully conducted continuity tests on sensors/probes.	34. ❑	34. ❑
	35. Successfully performed a magnaflux or container pressure test (deep drawing process only).	35. ❑	35. ❑
	36. Verified press diagnostics.	36. ❑	36. ❑

Affidavit of Successful Completion

NIMS Level III Metal Stamping Credentialing Program

Credentialing Achievement Record

Please print

Candidate Name	Reg. No.	Date Completed

The credentialing candidate named above has completed all necessary CAR requirements for NIMS Level III OJT recognition.

Site Name and Address:	Site No.

Indicate in the number of Skill Checks completed and dates of successful performance for each Skill Check

Duty Cluster Name ***SETUP EQUIPMENT WITH DEEP DRAWING DIES***	**Required Skill Checks**	*Number of Skill Checks Completed*
	5	
Successful Skill Check Attempt #1	Date:	
Successful Skill Check Attempt #2	Date:	
Successful Skill Check Attempt #3	Date:	
Successful Skill Check Attempt #4	Date:	
Successful Skill Check Attempt #5	Date:	
Experience-eligibility statements have been completed, dated, and co-initialed.	Yes ❑	No ❑

Manual Feed ❍ **YES** ❍ **NO**
Coil Fed ❍ **YES** ❍ **NO**
Other:_____
Specify

Opportunity Observations Troubleshooting & Corrective/Preventive Maintenance		
Successfully demonstrated at least five troubleshooting situations.	❍ **YES**	❍ **NO**
Successfully demonstrated at least 10 maintenance activities.	❍ **YES**	❍ **NO**

_____ _____19____
Site Coordinator *Signature* **Date**

_____ _____19____
Supervisor *Signature* **Date**

_____ _____19____
Candidate *Signature* **Date**

COMMENTS:

Make a copy of the completed *Affidavit of Successful Completion* for your records and send the original to:



The National Institute for Metalworking Skills
3251 Old Lee Highway, Suite 205
Fairfax, Virginia, 22030
http://nims-skills.org