National Institute for Metalworking Skills, Inc.

Credentialing Achievement Record

Stamping
Level III
Parts Inspection and Quality Control

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

METAL STAMPING CREDENTIALING PROGRAM

*LEVEL **III** CREDENTIALING ACHIEVEMENT **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 Guide to Administering Credentialing Achievement Records 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

****

Parts Inspection and Quality Control -Level III - Option 1

DUTY CLUSTER 1.1a-b

Duty Cluster and Critical Work Activities	Date Completed	Supervisor Initials	Trainer Initials	Candidate Initials
Program/Equipment Orientation (required for all candidates)				
Parts Inspection and Quality Control				
Candidate has successfully completed all required safety training/courses as specified by the work facility or required by OHSA. Candidate has working knowledge of applicable OHSA, ANSI, and ISO/QS 9000 requirements and guidelines.				
Candidate has demonstrated expert knowledge of material/part conformance standards and expert knowledge of SPC recording techniques.				
Candidate demonstrated ability to recognize and explain the function of QC/QA equipment and prints used for part inspections and quality control evaluations.				
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/lab area in compliance with facility housekeeping policies and has no reported violations for a period of three (3) consecutive months.				
Candidate has successfully completed the probationary period for this position as specified by the work facility.				

NIMS

CAR SKILL CHECK #1a

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

Work Activity

1a - Part Inspection and Quality Control (Option 1)

Performance Conditions

Setting: Two OJT Observations in the Quality Control Laboratory. Candidate/technician is to inspect a finished or first-run part using hand-held precision measuring devices (i.e., scales, micrometers, calipers, attribute gages, etc.) and then inspect the same part using measurement instrumentation (e.g., Optical Comparator). Processes and standards presented in this Skill Check are applicable to all required attempts (Skill Check 1 of 5).

Note:

If you do not use an Optical Comparator at your facility, you may substitute a "vision system" for this Skill Check or proceed to **Skill Check Option 2** that involves using a CMM.

Safety Equipment:

- PPE/PPC

Tools, Equipment and Materials:

- Charts, vellum, print(s)
- Drafting supplies
- Checking fixtures
- Surface/Crown plate
- Pen/pencil and SPC documentation records/logs
- Tags/Inspection Sheet/Process Plan/SOP
- Parts marker
- Go/*no*-go devices

Measuring Instruments:

- Optical Comparator
- Micrometers
- Calipers
- Verniers
- Scales/rules
- Feeler gauges
- Height gauges
- Attribute gages

Attainment Standards

1. 100% of all procedural steps and standards, without assistance, within company-specific time limits, 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 perform quality control inspections using hand-held measuring devices and an Optical Comparator. All safety and plant procedures must be followed. Both the process and final result of the process will be evaluated by the examiner. 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 successfully complete the work activities under controlled assessment conditions. All work must be completed to standard.

Before administering the Skill Check:

- Read/review the *Guide to Administering Credentialing Achievement Records* developed for the program.
- Ensure that you have a copy of this Skill Check for the candidate to use while he/she is working and ensure that 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 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., Lockout/Tagout and HAZCOM/HAZMAT, personal protection equipment, compressed air, high voltage, sharps, etc.)*.

EXAMINER: Read aloud the Skill Check Script from the *Guide to Administering Credentialing Achievement Records* (*verbatim*).

When the candidate indicates that he/she has completed the Skill Check or when maximum time allowed has run out, assess the final product and follow closing procedures outlined in the *Guide to Administering Credentialing Achievement Records*

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 #1a**

Part Inspection & Quality Control

Process Elements			Process-Product Standards			
Steps	**Yes**	**No**		**Yes**	**No**	***NA***
⇒ **QC Part Inspection**						
1. Prepare and Stage Laboratory Work Stations	❑	❑	• Donned/wearing PPE according to OSHA/company standards. **(c)** • Obtained and setup validated hand-held precision measuring devices, tools, and equipment. • Obtained necessary prints, SPC charts, technical drawings and/or specification sheets. • Setup and readied Optical Comparator or similar vision-type system.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Receive Part to be Inspected	❑	❑	• Part received matched part number to be inspected. • Part prepared for quality control inspections.	❑ ❑	❑ ❑	❑ ❑
3. Inspect Attributes and Measure Part Using Hand-Held Precision Measurement Devices	❑	❑	• Visually checked part and features for rust, oil, dirt, and damage (holes, cracks, galling, lamination, etc.). • Assessed attributes and determined "*go*/no-go" status after visual inspection. • Determined "*go*/no-go" status based on gage measurement inspections. • Demonstrated accuracy when using hand-held measuring instruments and devices. **(c)** • Identified part conformance/non-conformance (attributes and variable tolerances) as per quality plan, spec-sheet, or SPC standards. **(c)** • Notified proper authority of any non-conformance dimensions or characteristics. • Complied with customer shipping requirements.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑
4. Record Findings	❑	❑	• Accurately documented quality/SPC data as per Quality/Process Plan. • Legibly filled-out appropriate reject and/or approval tags/labels or logbooks. • Securely affixed tag/label to containers or directly on part. • Ordered clearance of all non-conformance (bad) parts as needed. • No on-line contamination of quality parts. **(c)** • Submitted compliance reports to proper authority. • Retained or archived inspected part as need.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

Process Elements			Process-Product Standards			
⇒ **Use an Optical Comparator**	**Yes**	**No**		**Yes**	**No**	***NA***
1. Prepare Instrumentation Work Station	❑	❑	• Turned-on Optical Comparator and verified operation (lens clean, light on, controls work, etc.) • Setup finished part to be compared and prepared templates (in shadow or reflection). • Selected and setup proper tools, equipment, prints and materials. Understood Quality Plan/SPC requirements.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
2. Inspect Finished Part Using an Optical Comparator	❑	❑	• Carefully placed finished part on/in Optical Comparator in the correct position(s). • Accurately checked profiles/control limits as specified by Quality/Process Plan, print, or SPC. • Produced data necessary to describe the compliance of the profiles. • Turned-off Optical Comparator. Lens, surface area, workholders, and work site clean. • Notified proper authority of any non-conformance profiles.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed accurately according to Quality Plan or Specification Sheet.
- **b.** ❑ Acceptable part measurements and dimensional profiles were within **+/-** or *high/low* tolerance or control limit requirements.
- **c.** ❑ Demonstrated ability to recognize attribute requirements and distinguish between "go/no-go" status.
- **d**. ❑ Recorded or produced accurate SPC data necessary to document or describe compliance or conformity.
- **e.** ❑ Area and instrumentation was left clean, organized, and free of debris.
- **f.** ❑ All safety and plant procedures have been followed.

COMMENTS

Candidate: _____

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Examiner: _____

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Signature: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor/Supervisor)

_____ **Date:** _____
(Candidate)

NIMS

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

Part Inspection & Quality Control

Process Elements			Process-Product Standards			
Steps	**Yes**	**No**		**Yes**	**No**	***NA***
⇒ **QC Part Inspection**						
1. Prepare and Stage Laboratory Work Stations	❑	❑	• Donned/wearing PPE according to OSHA/company standards. **(c)** • Obtained and setup validated hand-held precision measuring devices, tools, and equipment. • Obtained necessary prints, SPC charts, technical drawings and/or specification sheets. • Setup and readied Optical Comparator or similar vision-type system.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Receive Part to be Inspected	❑	❑	• Part received matched part number to be inspected. • Part prepared for quality control inspections.	❑ ❑	❑ ❑	❑ ❑
3. Inspect Attributes and Measure Part Using Hand-Held Precision Measurement Devices	❑	❑	• Visually checked part and features for rust, oil, dirt, and damage (holes, cracks, galling, lamination, etc.). • Assessed attributes and determined "*go*/no-go" status after visual inspection. • Determined "*go*/no-go" status based on gage measurement inspections. • Demonstrated accuracy when using hand-held measuring instruments and devices. **(c)** • Identified part conformance/non-conformance (attributes and variable tolerances) as per quality plan, spec-sheet, or SPC standards. **(c)** • Notified proper authority of any non-conformance dimensions or characteristics. • Complied with customer shipping requirements.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑
4. Record Findings	❑	❑	• Accurately documented quality/SPC data as per Quality/Process Plan. • Legibly filled-out appropriate reject and/or approval tags/labels or logbooks. • Securely affixed tag/label to containers or directly on part. • Ordered clearance of all non-conformance (bad) parts as needed. • No on-line contamination of quality parts. **(c)** • Submitted compliance reports to proper authority. • Retained or archived inspected part as need.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

Process Elements			Process-Product Standards			
⇒ **Use an Optical Comparator**	**Yes**	**No**		**Yes**	**No**	***NA***
1. Prepare Instrumentation Work Station	❑	❑	• Turned-on Optical Comparator and verified operation (lens clean, light on, controls work, etc.) • Setup finished part to be compared and prepared templates (in shadow or reflection). • Selected and setup proper tools, equipment, prints and materials. Understood Quality Plan/SPC requirements.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
2. Inspect Finished Part Using an Optical Comparator	❑	❑	• Carefully placed finished part on/in Optical Comparator in the correct position(s). • Accurately checked profiles/control limits as specified by Quality/Process Plan, print, or SPC. • Produced data necessary to describe the compliance of the profiles. • Turned-off Optical Comparator. Lens, surface area, workholders, and work site clean. • Notified proper authority of any non-conformance profiles.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed accurately according to Quality Plan or Specification Sheet.
- **b.** ❑ Acceptable part measurements and dimensional profiles were within **+/-** or *high/low* tolerance or control limit requirements.
- **c.** ❑ Demonstrated ability to recognize attribute requirements and distinguish between "go/no-go" status.
- **d**. ❑ Recorded or produced accurate SPC data necessary to document or describe compliance or conformity.
- **e.** ❑ Area and instrumentation was left clean, organized, and free of debris.
- **f.** ❑ All safety and plant procedures have been followed.

COMMENTS

Candidate: _____

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Examiner: _____

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Signature: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor/Supervisor)

_____ **Date:** _____
(Candidate)

NIMS

***Examiner's CHECKLIST* — CAR SKILL CHECK #3a**

Part Inspection & Quality Control

Process Elements			Process-Product Standards			
Steps	**Yes**	**No**		**Yes**	**No**	***NA***
⇒ **QC Part Inspection**						
1. Prepare and Stage Laboratory Work Stations	❑	❑	• Donned/wearing PPE according to OSHA/company standards. **(c)** • Obtained and setup validated hand-held precision measuring devices, tools, and equipment. • Obtained necessary prints, SPC charts, technical drawings and/or specification sheets. • Setup and readied Optical Comparator or similar vision-type system.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Receive Part to be Inspected	❑	❑	• Part received matched part number to be inspected. • Part prepared for quality control inspections.	❑ ❑	❑ ❑	❑ ❑
3. Inspect Attributes and Measure Part Using Hand-Held Precision Measurement Devices	❑	❑	• Visually checked part and features for rust, oil, dirt, and damage (holes, cracks, galling, lamination, etc.). • Assessed attributes and determined "*go*/no-go" status after visual inspection. • Determined "*go*/no-go" status based on gage measurement inspections. • Demonstrated accuracy when using hand-held measuring instruments and devices. **(c)** • Identified part conformance/non-conformance (attributes and variable tolerances) as per quality plan, spec-sheet, or SPC standards. **(c)** • Notified proper authority of any non-conformance dimensions or characteristics. • Complied with customer shipping requirements.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑
4. Record Findings	❑	❑	• Accurately documented quality/SPC data as per Quality/Process Plan. • Legibly filled-out appropriate reject and/or approval tags/labels or logbooks. • Securely affixed tag/label to containers or directly on part. • Ordered clearance of all non-conformance (bad) parts as needed. • No on-line contamination of quality parts. **(c)** • Submitted compliance reports to proper authority. • Retained or archived inspected part as need.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

Process Elements			Process-Product Standards			
⇒ **Use an Optical Comparator**	**Yes**	**No**		**Yes**	**No**	***NA***
1. Prepare Instrumentation Work Station	❑	❑	• Turned-on Optical Comparator and verified operation (lens clean, light on, controls work, etc.) • Setup finished part to be compared and prepared templates (in shadow or reflection). • Selected and setup proper tools, equipment, prints and materials. Understood Quality Plan/SPC requirements.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
2. Inspect Finished Part Using an Optical Comparator	❑	❑	• Carefully placed finished part on/in Optical Comparator in the correct position(s). • Accurately checked profiles/control limits as specified by Quality/Process Plan, print, or SPC. • Produced data necessary to describe the compliance of the profiles. • Turned-off Optical Comparator. Lens, surface area, workholders, and work site clean. • Notified proper authority of any non-conformance profiles.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed accurately according to Quality Plan or Specification Sheet.
- **b.** ❑ Acceptable part measurements and dimensional profiles were within **+/-** or *high/low* tolerance or control limit requirements.
- **c.** ❑ Demonstrated ability to recognize attribute requirements and distinguish between "go/no-go" status.
- **d**. ❑ Recorded or produced accurate SPC data necessary to document or describe compliance or conformity.
- **e.** ❑ Area and instrumentation was left clean, organized, and free of debris.
- **f.** ❑ All safety and plant procedures have been followed.

COMMENTS

Candidate: _____

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Examiner: _____

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Signature: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor/Supervisor)

_____ **Date:** _____
(Candidate)

NIMS

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

Part Inspection & Quality Control

Process Elements			Process-Product Standards			
Steps	**Yes**	**No**		**Yes**	**No**	***NA***
⇒ **QC Part Inspection**						
1. Prepare and Stage Laboratory Work Stations	❑	❑	• Donned/wearing PPE according to OSHA/company standards. **(c)** • Obtained and setup validated hand-held precision measuring devices, tools, and equipment. • Obtained necessary prints, SPC charts, technical drawings and/or specification sheets. • Setup and readied Optical Comparator or similar vision-type system.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Receive Part to be Inspected	❑	❑	• Part received matched part number to be inspected. • Part prepared for quality control inspections.	❑ ❑	❑ ❑	❑ ❑
3. Inspect Attributes and Measure Part Using Hand-Held Precision Measurement Devices	❑	❑	• Visually checked part and features for rust, oil, dirt, and damage (holes, cracks, galling, lamination, etc.). • Assessed attributes and determined "*go*/no-go" status after visual inspection. • Determined "*go*/no-go" status based on gage measurement inspections. • Demonstrated accuracy when using hand-held measuring instruments and devices. **(c)** • Identified part conformance/non-conformance (attributes and variable tolerances) as per quality plan, spec-sheet, or SPC standards. **(c)** • Notified proper authority of any non-conformance dimensions or characteristics. • Complied with customer shipping requirements.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑
4. Record Findings	❑	❑	• Accurately documented quality/SPC data as per Quality/Process Plan. • Legibly filled-out appropriate reject and/or approval tags/labels or logbooks. • Securely affixed tag/label to containers or directly on part. • Ordered clearance of all non-conformance (bad) parts as needed. • No on-line contamination of quality parts. **(c)** • Submitted compliance reports to proper authority. • Retained or archived inspected part as need.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

Process Elements			Process-Product Standards			
⇒ **Use an Optical Comparator**	**Yes**	**No**		**Yes**	**No**	***NA***
1. Prepare Instrumentation Work Station	❑	❑	• Turned-on Optical Comparator and verified operation (lens clean, light on, controls work, etc.) • Setup finished part to be compared and prepared templates (in shadow or reflection). • Selected and setup proper tools, equipment, prints and materials. Understood Quality Plan/SPC requirements.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
2. Inspect Finished Part Using an Optical Comparator	❑	❑	• Carefully placed finished part on/in Optical Comparator in the correct position(s). • Accurately checked profiles/control limits as specified by Quality/Process Plan, print, or SPC. • Produced data necessary to describe the compliance of the profiles. • Turned-off Optical Comparator. Lens, surface area, workholders, and work site clean. • Notified proper authority of any non-conformance profiles.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed accurately according to Quality Plan or Specification Sheet.
- **b.** ❑ Acceptable part measurements and dimensional profiles were within **+/-** or *high/low* tolerance or control limit requirements.
- **c.** ❑ Demonstrated ability to recognize attribute requirements and distinguish between "go/no-go" status.
- **d**. ❑ Recorded or produced accurate SPC data necessary to document or describe compliance or conformity.
- **e.** ❑ Area and instrumentation was left clean, organized, and free of debris.
- **f.** ❑ All safety and plant procedures have been followed.

COMMENTS

Candidate: _____

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Examiner: _____

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Signature: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor/Supervisor)

_____ **Date:** _____
(Candidate)

NIMS

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

Part Inspection & Quality Control

Process Elements			Process-Product Standards			
Steps	**Yes**	**No**		**Yes**	**No**	***NA***
⇒ **QC Part Inspection**						
1. Prepare and Stage Laboratory Work Stations	❑	❑	• Donned/wearing PPE according to OSHA/company standards. **(c)** • Obtained and setup validated hand-held precision measuring devices, tools, and equipment. • Obtained necessary prints, SPC charts, technical drawings and/or specification sheets. • Setup and readied Optical Comparator or similar vision-type system.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑
2. Receive Part to be Inspected	❑	❑	• Part received matched part number to be inspected. • Part prepared for quality control inspections.	❑ ❑	❑ ❑	❑ ❑
3. Inspect Attributes and Measure Part Using Hand-Held Precision Measurement Devices	❑	❑	• Visually checked part and features for rust, oil, dirt, and damage (holes, cracks, galling, lamination, etc.). • Assessed attributes and determined "*go*/no-go" status after visual inspection. • Determined "*go*/no-go" status based on gage measurement inspections. • Demonstrated accuracy when using hand-held measuring instruments and devices. **(c)** • Identified part conformance/non-conformance (attributes and variable tolerances) as per quality plan, spec-sheet, or SPC standards. **(c)** • Notified proper authority of any non-conformance dimensions or characteristics. • Complied with customer shipping requirements.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑
4. Record Findings	❑	❑	• Accurately documented quality/SPC data as per Quality/Process Plan. • Legibly filled-out appropriate reject and/or approval tags/labels or logbooks. • Securely affixed tag/label to containers or directly on part. • Ordered clearance of all non-conformance (bad) parts as needed. • No on-line contamination of quality parts. **(c)** • Submitted compliance reports to proper authority. • Retained or archived inspected part as need.	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑

Skill Check continued

Process Elements			Process-Product Standards			
⇒ **Use an Optical Comparator**	**Yes**	**No**		**Yes**	**No**	***NA***
1. Prepare Instrumentation Work Station	❑	❑	• Turned-on Optical Comparator and verified operation (lens clean, light on, controls work, etc.) • Setup finished part to be compared and prepared templates (in shadow or reflection). • Selected and setup proper tools, equipment, prints and materials. Understood Quality Plan/SPC requirements.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
2. Inspect Finished Part Using an Optical Comparator	❑	❑	• Carefully placed finished part on/in Optical Comparator in the correct position(s). • Accurately checked profiles/control limits as specified by Quality/Process Plan, print, or SPC. • Produced data necessary to describe the compliance of the profiles. • Turned-off Optical Comparator. Lens, surface area, workholders, and work site clean. • Notified proper authority of any non-conformance profiles.	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Jobs were performed accurately according to Quality Plan or Specification Sheet.
- **b.** ❑ Acceptable part measurements and dimensional profiles were within **+/-** or *high/low* tolerance or control limit requirements.
- **c.** ❑ Demonstrated ability to recognize attribute requirements and distinguish between "go/no-go" status.
- **d**. ❑ Recorded or produced accurate SPC data necessary to document or describe compliance or conformity.
- **e.** ❑ Area and instrumentation was left clean, organized, and free of debris.
- **f.** ❑ All safety and plant procedures have been followed.

COMMENTS

Candidate: _____

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Examiner: _____

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Signature: _____ **Date:** _____
(Examiner)

_____ **Date:** _____
(Monitor/Supervisor)

_____ **Date:** _____
(Candidate)

1.1a - CAR SKILL CHECK SUMMARY

Critical Work Activities and Skill Checks Completed	Date Completed
Parts Inspection and Quality Control - Option 1	
Successful Skill Check Attempt #1a	
Successful Skill Check Attempt #2a	
Successful Skill Check Attempt #3a	
Successful Skill Check Attempt #4a	
Successful Skill Check Attempt #5a	

Quality Control Part Inspection Using a CMM - Option 2

DUTY CLUSTER 1.1b

Duty Cluster and Critical Work Activities	Date Completed	Supervisor Initials	Trainer Initials	Trainee Initials
Perform Quality Control Analysis Using a CMM				
Candidate has successfully completed all required safety training/courses as specified by the work facility or required by OHSA. Candidate has working knowledge of applicable OHSA, ANSI, and ISO/QS 9000 requirements and guidelines.				
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/lab 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 (quality characteristics, dimensional variables, control limits, levels of tolerance, metallurgy, etc.) and expert knowledge of SPC recording requirements.				
Candidate has demonstrated the ability to use prints, charts, and technical drawings. Candidate can setup and conduct quality control inspections using measurement instrumentation(optical comparator or CMM) and hand-held precision measuring devices (micrometers, calipers, dial indicators, scales, fixture gages, height gages, protractors/drafting tools, etc.).				
Candidate has demonstrated proficiency calculating and comparing dimensional and statistical data obtained from blueprints and control charts.				
Candidate has demonstrated leadership qualities and communication skills consistent with the position and level of responsibility.				

NIMS

SKILL CHECK #1b

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

Work Activity

1.b - Perform a Part Inspection Using a CMM

Performance Conditions

Setting: OJT Observation in Quality Lab. Given a finished part, Process/Quality Plan and blueprint, candidate will perform a part inspection using a Coordinate Measuring Machine (CMM). Candidate will inspect a part's key characteristics and produce dimensional data needed to describe the compliance (or non-compliance) of these part variables. First of five required Skill Checks.

Safety Equipment:

◊ PPE/PPC

Tools, Equipment and Materials:

- Assorted Hand Tools
- Pen/Pencil
- Calculator (optional)
- Process/Quality Plan and/or Control Charts/SOP
- CMM Operating Instructions (if needed)
- Blueprints/Technical Drawings
- SPC Log Book and Tags

Measuring Instruments:

- Rules/Tape Measure
- Calipers
- Micrometers
- Verniers
- Squares
- Test Equipment
- CMM

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 Inspect a finished part using a CMM. 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 *Guide to Administering Credentialing Achievement Records* 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 (compressed air, residual/high voltage, HAZMAT, etc.).

EXAMINER: Read aloud the *Skill Check Script* from the *Guide to Administering Credentialing Achievement Records* (*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 *Guide to Administering Credentialing Achievement Records*.

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.

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

Perform Part Inspection Using CMM

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒	Yes	No		Yes	No	*NA*
1. Prepare Inspection Site and CMM	❑	❑	• PPE/PPC appropriate for the job. **(c)**	❑	❑	❑
			• Obtained and read Process/Quality Plan.	❑	❑	❑
			• Floor clean and cleared of any obstructions, obstacles, or extra parts.	❑	❑	❑
			• CMM work surface clean (used lint-free cloth with proper solution), level, and no burrs/nicks present.			
			• Glass scales clean.	❑	❑	❑
			• CMM activated - Light "on" and air pressure (psi) or voltage correct and stable (log-on procedure displayed).	❑	❑	❑
			• Air filtering correctly (filters replaced as needed).	❑	❑	❑
			• CMM verified for calibration.	❑	❑	❑
			• Obtained part and setup correct blueprint (part number and revision level as per Process/Quality Plan).	❑	❑	❑
			• Followed log-on/startup procedures. Controller is communicating with computer.	❑	❑	❑
				❑	❑	❑
2. Verify Part from Information on Blueprint	❑	❑	• The correct part was received as per Process/Quality Plan and blueprint (part number corresponded to blueprint specifications).	❑	❑	❑
			• Compared profiles of part to blueprint.	❑	❑	❑
			• Part visually inspected for quality characteristics.	❑	❑	❑
3. Access Program	❑	❑	• Controller initialized and program called-up from memory/menu was correct. Information on computer module matched blueprint and/or part number requirements.	❑	❑	❑
			• System parameters sent to CMM; coordinates set; and instrument inspection-ready.	❑	❑	❑
4. Attach Fixture and Part	❑	❑	• Correct fixture secured to work surface (proper fit and alignment).	❑	❑	❑
			• Fixture identification number matched part number.	❑	❑	❑
			• Part secured to checking fixture (part does not move).	❑	❑	❑
			• Followed correct part setup procedure and demonstrated proficiency using hand tools.	❑	❑	❑

Skill Check continued

SETUP PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	*NA*
5. Inspect Part Using CMM	❑	❑	• Followed program start procedures (on-screen instructions) in accordance with Process/Quality Plan and blueprint specifications. Status light green.	❑	❑	❑
			• Demonstrated proficiency manipulating program and controls.	❑	❑	❑
			• Coordinate check points were accepted by computer and printed on inspection data sheet.	❑	❑	❑
			• Compared computer printout data to blueprint and/or SPC/Quality Plan specifications (Expert ability required).	❑	❑	❑
			• Recognized part conformance or non-conformance (determined go/no-*go*).	❑	❑	❑
			• Followed correct procedure for reporting (SPC) results/findings using appropriate unit notations.	❑	❑	❑
			• All required written documentation accurately and legibly completed and filed.	❑	❑	❑
5. Breakdown Work Station and Clean Area	❑	❑	• Computer returned to original start screen or main menu.	❑	❑	❑
			• Part removed from checking fixture (No damage to fixture).	❑	❑	❑
			• Checking fixture removed from surface/scan area (No damage to fixture or holder).	❑	❑	❑
			• Demonstrated proficiency using hand tools.	❑	❑	❑
			• Fixture returned to proper storage location.	❑	❑	❑
			• Inspected/tagged part placed in proper container.	❑	❑	❑
			• Work area and CMM surface(s) clean and organized. CMM turned off or at rest.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Inspection was conducted proficiently according to Process/Quality Plan, SOP, and blueprint specifications.
- **b.** ❑ Candidate demonstrated ability to identify and distinguish between *go/no-go* status in regard to quality characteristics, control limits, and dimensional tolerances.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, tags, inspection sheets, reports, and/or in log books or database files.
- **d.** ❑ Candidate demonstrated proficiency in collecting, analyzing and interpreting raw data and comparing findings to SPC, QS-9000, and/or customer requirements.
- **e.** ❑ Candidate was able to identify inconsistencies in available data and took appropriate actions in non-compliance situations.
- **f.** ❑ All safety and plant procedures have been followed and work area/surface was left clean.

COMMENTS

Candidate: _____

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Examiner: _____

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

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

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

Perform Part Inspection Using CMM

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒	Yes	No		Yes	No	*NA*
1. Prepare Inspection Site and CMM	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Obtained and read Process/Quality Plan. • Floor clean and cleared of any obstructions, obstacles, or extra parts. • CMM work surface clean (used lint-free cloth with proper solution), level, and no burrs/nicks present. • Glass scales clean. • CMM activated - Light "on" and air pressure (psi) or voltage correct and stable (log-on procedure displayed). • Air filtering correctly (filters replaced as needed). • CMM verified for calibration. • Obtained part and setup correct blueprint (part number and revision level as per Process/Quality Plan). • Followed log-on/startup procedures. Controller is communicating with computer.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
2. Verify Part from Information on Blueprint	❑	❑	• The correct part was received as per Process/Quality Plan and blueprint (part number corresponded to blueprint specifications). • Compared profiles of part to blueprint. • Part visually inspected for quality characteristics.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
3. Access Program	❑	❑	• Controller initialized and program called-up from memory/menu was correct. Information on computer module matched blueprint and/or part number requirements. • System parameters sent to CMM; coordinates set; and instrument inspection-ready.	❑ ❑	❑ ❑	❑ ❑
4. Attach Fixture and Part	❑	❑	• Correct fixture secured to work surface (proper fit and alignment). • Fixture identification number matched part number. • Part secured to checking fixture (part does not move). • Followed correct part setup procedure and demonstrated proficiency using hand tools.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑

Skill Check continued

SETUP PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	*NA*
5. Inspect Part Using CMM	❑	❑	• Followed program start procedures (on-screen instructions) in accordance with Process/Quality Plan and blueprint specifications. Status light green.	❑	❑	❑
			• Demonstrated proficiency manipulating program and controls.	❑	❑	❑
			• Coordinate check points were accepted by computer and printed on inspection data sheet.	❑	❑	❑
			• Compared computer printout data to blueprint and/or SPC/Quality Plan specifications (Expert ability required).	❑	❑	❑
			• Recognized part conformance or non-conformance (determined go/no-*go*).	❑	❑	❑
			• Followed correct procedure for reporting (SPC) results/findings using appropriate unit notations.	❑	❑	❑
			• All required written documentation accurately and legibly completed and filed.	❑	❑	❑
5. Breakdown Work Station and Clean Area	❑	❑	• Computer returned to original start screen or main menu.	❑	❑	❑
			• Part removed from checking fixture (No damage to fixture).	❑	❑	❑
			• Checking fixture removed from surface/scan area (No damage to fixture or holder).	❑	❑	❑
			• Demonstrated proficiency using hand tools.	❑	❑	❑
			• Fixture returned to proper storage location.	❑	❑	❑
			• Inspected/tagged part placed in proper container.	❑	❑	❑
			• Work area and CMM surface(s) clean and organized. CMM turned off or at rest.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Inspection was conducted proficiently according to Process/Quality Plan, SOP, and blueprint specifications.
- **b.** ❑ Candidate demonstrated ability to identify and distinguish between *go/no-go* status in regard to quality characteristics, control limits, and dimensional tolerances.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, tags, inspection sheets, reports, and/or in log books or database files.
- **d**. ❑ Candidate demonstrated proficiency in collecting, analyzing and interpreting raw data and comparing findings to SPC, QS-9000, and/or customer requirements.
- **e.** ❑ Candidate was able to identify inconsistencies in available data and took appropriate actions in non-compliance situations.
- **f.** ❑ All safety and plant procedures have been followed and work area/surface was left clean.

COMMENTS

Candidate: _____

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Examiner: _____

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

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

***Examiner's CHECKLIST* — CAR SKILL CHECK #3b**

Perform Part Inspection Using CMM

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒	Yes	No		Yes	No	*NA*
1. Prepare Inspection Site and CMM	❑	❑	• PPE/PPC appropriate for the job. **(c)**	❑	❑	❑
			• Obtained and read Process/Quality Plan.	❑	❑	❑
			• Floor clean and cleared of any obstructions, obstacles, or extra parts.	❑	❑	❑
			• CMM work surface clean (used lint-free cloth with proper solution), level, and no burrs/nicks present.			
			• Glass scales clean.	❑	❑	❑
			• CMM activated - Light "on" and air pressure (psi) or voltage correct and stable (log-on procedure displayed).	❑	❑	❑
			• Air filtering correctly (filters replaced as needed).	❑	❑	❑
			• CMM verified for calibration.	❑	❑	❑
			• Obtained part and setup correct blueprint (part number and revision level as per Process/Quality Plan).	❑	❑	❑
			• Followed log-on/startup procedures. Controller is communicating with computer.	❑	❑	❑
				❑	❑	❑
2. Verify Part from Information on Blueprint	❑	❑	• The correct part was received as per Process/Quality Plan and blueprint (part number corresponded to blueprint specifications).	❑	❑	❑
			• Compared profiles of part to blueprint.	❑	❑	❑
			• Part visually inspected for quality characteristics.	❑	❑	❑
3. Access Program	❑	❑	• Controller initialized and program called-up from memory/menu was correct. Information on computer module matched blueprint and/or part number requirements.	❑	❑	❑
			• System parameters sent to CMM; coordinates set; and instrument inspection-ready.	❑	❑	❑
4. Attach Fixture and Part	❑	❑	• Correct fixture secured to work surface (proper fit and alignment).	❑	❑	❑
			• Fixture identification number matched part number.	❑	❑	❑
			• Part secured to checking fixture (part does not move).	❑	❑	❑
			• Followed correct part setup procedure and demonstrated proficiency using hand tools.	❑	❑	❑

Skill Check continued

SETUP PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	*NA*
5. Inspect Part Using CMM	❑	❑	• Followed program start procedures (on-screen instructions) in accordance with Process/Quality Plan and blueprint specifications. Status light green.	❑	❑	❑
			• Demonstrated proficiency manipulating program and controls.	❑	❑	❑
			• Coordinate check points were accepted by computer and printed on inspection data sheet.	❑	❑	❑
			• Compared computer printout data to blueprint and/or SPC/Quality Plan specifications (Expert ability required).	❑	❑	❑
			• Recognized part conformance or non-conformance (determined go/no-*go*).	❑	❑	❑
			• Followed correct procedure for reporting (SPC) results/findings using appropriate unit notations.	❑	❑	❑
			• All required written documentation accurately and legibly completed and filed.	❑	❑	❑
5. Breakdown Work Station and Clean Area	❑	❑	• Computer returned to original start screen or main menu.	❑	❑	❑
			• Part removed from checking fixture (No damage to fixture).	❑	❑	❑
			• Checking fixture removed from surface/scan area (No damage to fixture or holder).	❑	❑	❑
			• Demonstrated proficiency using hand tools.	❑	❑	❑
			• Fixture returned to proper storage location.	❑	❑	❑
			• Inspected/tagged part placed in proper container.	❑	❑	❑
			• Work area and CMM surface(s) clean and organized. CMM turned off or at rest.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Inspection was conducted proficiently according to Process/Quality Plan, SOP, and blueprint specifications.
- **b.** ❑ Candidate demonstrated ability to identify and distinguish between *go/no-go* status in regard to quality characteristics, control limits, and dimensional tolerances.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, tags, inspection sheets, reports, and/or in log books or database files.
- **d.** ❑ Candidate demonstrated proficiency in collecting, analyzing and interpreting raw data and comparing findings to SPC, QS-9000, and/or customer requirements.
- **e.** ❑ Candidate was able to identify inconsistencies in available data and took appropriate actions in non-compliance situations.
- **f.** ❑ All safety and plant procedures have been followed and work area/surface was left clean.

COMMENTS

Candidate: _____

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Examiner: _____

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

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

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

Perform Part Inspection Using CMM

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒	Yes	No		Yes	No	*NA*
1. Prepare Inspection Site and CMM	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Obtained and read Process/Quality Plan. • Floor clean and cleared of any obstructions, obstacles, or extra parts. • CMM work surface clean (used lint-free cloth with proper solution), level, and no burrs/nicks present. • Glass scales clean. • CMM activated - Light "on" and air pressure (psi) or voltage correct and stable (log-on procedure displayed). • Air filtering correctly (filters replaced as needed). • CMM verified for calibration. • Obtained part and setup correct blueprint (part number and revision level as per Process/Quality Plan). • Followed log-on/startup procedures. Controller is communicating with computer.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
2. Verify Part from Information on Blueprint	❑	❑	• The correct part was received as per Process/Quality Plan and blueprint (part number corresponded to blueprint specifications). • Compared profiles of part to blueprint. • Part visually inspected for quality characteristics.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
3. Access Program	❑	❑	• Controller initialized and program called-up from memory/menu was correct. Information on computer module matched blueprint and/or part number requirements. • System parameters sent to CMM; coordinates set; and instrument inspection-ready.	❑ ❑	❑ ❑	❑ ❑
4. Attach Fixture and Part	❑	❑	• Correct fixture secured to work surface (proper fit and alignment). • Fixture identification number matched part number. • Part secured to checking fixture (part does not move). • Followed correct part setup procedure and demonstrated proficiency using hand tools.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑

Skill Check continued

SETUP PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	*NA*
5. Inspect Part Using CMM	❑	❑	• Followed program start procedures (on-screen instructions) in accordance with Process/Quality Plan and blueprint specifications. Status light green.	❑	❑	❑
			• Demonstrated proficiency manipulating program and controls.	❑	❑	❑
			• Coordinate check points were accepted by computer and printed on inspection data sheet.	❑	❑	❑
			• Compared computer printout data to blueprint and/or SPC/Quality Plan specifications (Expert ability required).	❑	❑	❑
			• Recognized part conformance or non-conformance (determined go/no-*go*).	❑	❑	❑
			• Followed correct procedure for reporting (SPC) results/findings using appropriate unit notations.	❑	❑	❑
			• All required written documentation accurately and legibly completed and filed.	❑	❑	❑
5. Breakdown Work Station and Clean Area	❑	❑	• Computer returned to original start screen or main menu.	❑	❑	❑
			• Part removed from checking fixture (No damage to fixture).	❑	❑	❑
			• Checking fixture removed from surface/scan area (No damage to fixture or holder).	❑	❑	❑
			• Demonstrated proficiency using hand tools.	❑	❑	❑
			• Fixture returned to proper storage location.	❑	❑	❑
			• Inspected/tagged part placed in proper container.	❑	❑	❑
			• Work area and CMM surface(s) clean and organized. CMM turned off or at rest.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Inspection was conducted proficiently according to Process/Quality Plan, SOP, and blueprint specifications.
- **b.** ❑ Candidate demonstrated ability to identify and distinguish between *go/no-go* status in regard to quality characteristics, control limits, and dimensional tolerances.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, tags, inspection sheets, reports, and/or in log books or database files.
- **d.** ❑ Candidate demonstrated proficiency in collecting, analyzing and interpreting raw data and comparing findings to SPC, QS-9000, and/or customer requirements.
- **e.** ❑ Candidate was able to identify inconsistencies in available data and took appropriate actions in non-compliance situations.
- **f.** ❑ All safety and plant procedures have been followed and work area/surface was left clean.

COMMENTS

Candidate: _____

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Examiner: _____

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

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

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

Perform Part Inspection Using CMM

SETUP PROCESS			PROCESS-PRODUCT STANDARDS			
⇒	Yes	No		Yes	No	*NA*
1. Prepare Inspection Site and CMM	❑	❑	• PPE/PPC appropriate for the job. **(c)** • Obtained and read Process/Quality Plan. • Floor clean and cleared of any obstructions, obstacles, or extra parts. • CMM work surface clean (used lint-free cloth with proper solution), level, and no burrs/nicks present. • Glass scales clean. • CMM activated - Light "on" and air pressure (psi) or voltage correct and stable (log-on procedure displayed). • Air filtering correctly (filters replaced as needed). • CMM verified for calibration. • Obtained part and setup correct blueprint (part number and revision level as per Process/Quality Plan). • Followed log-on/startup procedures. Controller is communicating with computer.	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑	❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑
2. Verify Part from Information on Blueprint	❑	❑	• The correct part was received as per Process/Quality Plan and blueprint (part number corresponded to blueprint specifications). • Compared profiles of part to blueprint. • Part visually inspected for quality characteristics.	❑ ❑ ❑	❑ ❑ ❑	❑ ❑ ❑
3. Access Program	❑	❑	• Controller initialized and program called-up from memory/menu was correct. Information on computer module matched blueprint and/or part number requirements. • System parameters sent to CMM; coordinates set; and instrument inspection-ready.	❑ ❑	❑ ❑	❑ ❑
4. Attach Fixture and Part	❑	❑	• Correct fixture secured to work surface (proper fit and alignment). • Fixture identification number matched part number. • Part secured to checking fixture (part does not move). • Followed correct part setup procedure and demonstrated proficiency using hand tools.	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑	❑ ❑ ❑ ❑

Skill Check continued

SETUP PROCESS	Yes	No	PROCESS-PRODUCT STANDARDS	Yes	No	*NA*
5. Inspect Part Using CMM	❑	❑	• Followed program start procedures (on-screen instructions) in accordance with Process/Quality Plan and blueprint specifications. Status light green.	❑	❑	❑
			• Demonstrated proficiency manipulating program and controls.	❑	❑	❑
			• Coordinate check points were accepted by computer and printed on inspection data sheet.	❑	❑	❑
			• Compared computer printout data to blueprint and/or SPC/Quality Plan specifications (Expert ability required).	❑	❑	❑
			• Recognized part conformance or non-conformance (determined go/no-*go*).	❑	❑	❑
			• Followed correct procedure for reporting (SPC) results/findings using appropriate unit notations.	❑	❑	❑
			• All required written documentation accurately and legibly completed and filed.	❑	❑	❑
5. Breakdown Work Station and Clean Area	❑	❑	• Computer returned to original start screen or main menu.	❑	❑	❑
			• Part removed from checking fixture (No damage to fixture).	❑	❑	❑
			• Checking fixture removed from surface/scan area (No damage to fixture or holder).	❑	❑	❑
			• Demonstrated proficiency using hand tools.	❑	❑	❑
			• Fixture returned to proper storage location.	❑	❑	❑
			• Inspected/tagged part placed in proper container.	❑	❑	❑
			• Work area and CMM surface(s) clean and organized. CMM turned off or at rest.	❑	❑	❑

FINAL PRODUCT STANDARDS

"Work is Done As Expected When:"

- **a.** ❑ Inspection was conducted proficiently according to Process/Quality Plan, SOP, and blueprint specifications.
- **b.** ❑ Candidate demonstrated ability to identify and distinguish between *go/no-go* status in regard to quality characteristics, control limits, and dimensional tolerances.
- **c.** ❑ Accurate and legible information/data has been recorded on forms, tags, inspection sheets, reports, and/or in log books or database files.
- **d.** ❑ Candidate demonstrated proficiency in collecting, analyzing and interpreting raw data and comparing findings to SPC, QS-9000, and/or customer requirements.
- **e.** ❑ Candidate was able to identify inconsistencies in available data and took appropriate actions in non-compliance situations.
- **f.** ❑ All safety and plant procedures have been followed and work area/surface was left clean.

COMMENTS

Candidate: _____

_____

_____

_____

_____

Examiner: _____

_____

_____

_____

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

_____ **Date:** _____
(Monitor)

_____ **Date:** _____
(Candidate)

1.1b - CAR SKILL CHECK SUMMARY

Critical Work Activities and Skill Checks Completed	Date Completed
Parts Inspection and Quality Control - Option 2	
Successful Skill Check Attempt #1b	
Successful Skill Check Attempt #2b	
Successful Skill Check Attempt #3b	
Successful Skill Check Attempt #4b	
Successful Skill Check Attempt #5b	

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 **Part Inspection and Quality Control Using an Optical Comparator** **(Option 1)**	Required Skill Checks	*Number of Skill Checks Completed*
	5	
Successful Skill Check Attempt #1a	Date:	
Successful Skill Check Attempt #2a	Date:	
Successful Skill Check Attempt #3a	Date:	
Successful Skill Check Attempt #4a	Date:	
Successful Skill Check Attempt #5a	Date:	
Experience-eligibility statements have been completed, dated, and co-initialed.	Yes ❑	No ❑

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

Duty Cluster Name **Quality Control Part Inspection Using a CMM** **(Option 2)**	Required Skill Checks	*Number of Skill Checks Completed*
	5	
Successful Skill Check Attempt #1b	Date:	
Successful Skill Check Attempt #2b	Date:	
Successful Skill Check Attempt #3b	Date:	
Successful Skill Check Attempt #4b	Date:	
Successful Skill Check Attempt #5b	Date:	
Experience-eligibility statements have been completed, dated, and co-initialed.	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