Welding and Quality Technician

QP Code: ASC/Q3109

Version: 1.0

NSQF Level: 3

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Contents

ASC/Q3109: Welding and Quality Technician

Brief Job Description

Welding and inspection technician may also be called Assistant welder. The role primilary involves supporting senior welder in all types of Gas Discharge Arc Welding (MIG, MAG andTIG), Resistance Welding (Spot Welding, Projection Welding, Butt Welding) and Automatic or Robotic Welding Process and in build quality inspection activities.

Personal Attributes

The individual should be able to read basic drawings, identify various tools and equipments, observe gauges, dials etc. Maintaining arm steadiness, ability to quickly move hand to grasp and assemble objects (dexterity), reading, writing and communication skills and sensitivity towards safety for self, others and equipment.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ASC/N0006: Maintain a safe and healthy working environment
2. ASC/N0007: Conduct quality checks and inspection of the finished product
3. ASC/N0008: Conduct regular cleaning and maintenance of the equipment
4. ASC/N0021: Maintain 5S at the work premises
5. ASC/N3103: Understand welding job requirements and related processes
6. ASC/N3104: Prepare the welding machine for the welding process
7. ASC/N3105: Support the Welder in the Welding Process
8. ASC/N3106: Remove the finished goods and store them in the designated place
9. ASC/N6301: Inspect and maintain the product quality

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding

Country	India
NSQF Level	3
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7212.0100,7212.0200,7212.0300,2149.10
Minimum Educational Qualification & Experience	10th Class with 0-6 Months of experience Manufacturing department OR Certificate (ASC/Q3101 Welding Assistant Level-2) with 0-6 Months of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Training: to ASDC standards (ASC/Q 3101 Welding Assistant Level-2 Different Welding techniques used in organization, Reading and writing skills 5S & Safety
Minimum Job Entry Age	18 Years
Last Reviewed On	18/10/2016
Next Review Date	30/06/2020
Deactivation Date	30/06/2020
NSQC Approval Date	19/12/2018
Version	1.0

ASC/N0006: Maintain a safe and healthy working environment

Description

This NOS is about creating a Safe and Healthy work place, adhering to the safety guidelines in the working area, following practices which are not impacting the environment in a negative manner and training team members on health and safety related issues

Scope

The role holder will be responsible for

- identifying and reporting of risks
- creating and sustaining a safe, clean and environment friendly work place This NOS will be applicable to all Automotive sector manufacturing job roles

Elements and Performance Criteria

Identify and report the risks identified

To be competent, the user/individual on the job must be able to:

PC1.. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise

PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc

PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations

PC4. Create awareness amongst other by sharing information on the identified risks

Create and sustain a Safe, clean and environment friendly work place

To be competent, the user/individual on the job must be able to:

PC5.. Follow the instructions given on the equipment manual describing the operating process of the equipments

PC6.. Follow the Safety, Health and Environment related practices developed by the organization

PC7. Operate the machine using the recommended Personal Protective Equipments (PPE)

PC8. . Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc

PC9. Maintain high standards of personal hygiene at the work place

PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.

PC11. Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards, procedures and policies related to Health, Safety and Environment followed in the company

KU2. basic knowledge of Safety procedures(fire fighting, first aid) within the organization

KU3. knowledge of various types of PPEs and their usage

KU4. basic knowledge of risks/hazards associated with each occupation in the organization

KU5. how to safely operate various tools and machines and risksassociated with the tools/ equipment

KU6. knowledge of personal hygiene and how an individual an contribute towards creating a highly safe and clean working environment

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. write basic level notes and observations

GS2. read safety instructions put up across the plant premises

GS3. read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated

GS4. effectively communicate information to team members

GS5. informemployees in the plant and concerned functions about events, incidents & potential risks observed related to Safety, Health and Environment.

GS6. question operator/ supervisor in order to understand the safety related issues

GS7. attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs

GS8. use common sense and make judgments during day to day basis

GS9. use reasoning skills to identify and resolve basic problems

GS10. use common sense and make judgments during day to day basis

GS11. use reasoning skills to identify and resolve basic problems

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identify and report the risks identified	**8**	**23**	**-**	**-**
PC1.. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	3	6	-	-
PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc	2	6	-	-
PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	2	6	-	-
PC4. Create awareness amongst other by sharing information on the identified risks	1	5	-	-
Create and sustain a Safe, clean and environment friendly work place	**17**	**52**	**-**	**-**
PC5.. Follow the instructions given on the equipment manual describing the operating process of the equipments	3	7	-	-
PC6.. Follow the Safety, Health and Environment related practices developed by the organization	3	8	-	-
PC7. Operate the machine using the recommended Personal Protective Equipments (PPE)	3	8	-	-
PC8. . Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc	2	8	-	-
PC9. Maintain high standards of personal hygiene at the work place	2	7	-	-
PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	3	8	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others	1	6	-	-
NOS Total	**25**	**75**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0006
NOS Name	Maintain a safe and healthy working environment
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	15/09/2013
Next Review Date	31/03/2022
NSQC Clearance Date	20/07/2015

ASC/N0007: Conduct quality checks and inspection of the finished product

Description

This NOS is about inspecting the finished goods produced for any damages,deformities and Further repairing the parts produced so that the damaged/ defective pieces can be corrected and right quality components are supplied to1. The customer/ end user2. Internal manufacturing team

Scope

The Assistant Welder will be responsible for

- Inspection of finished goods
- Recording log of defective pieces and repairing minor defects

Elements and Performance Criteria

Inspection of finished goods to detect any deviations from the product design

To be competent, the user/individual on the job must be able to:

PC1.. measure the specifications of the finished product using devices like micrometer, vernier calipers, gauges, rulers, weighing scales and any other inspection equipment and compare with the parameters given in the work order

PC2.. compare texture, color, surface properties, hardness and strength with the given product specifications

Record log of defective products and discard defective pieces

To be competent, the user/individual on the job must be able to:

PC3. note down the observations of the basic inspection process and identify pieces which are ok and also not meeting the specified standards

PC4.. separate the defective pieces into two categories pieces which can be repaired/ modified and pieces which are beyond repair

PC5.. discard the pieces which are beyond repair and repair the ones which need minor modifications/ rework

PC6. maintain records of each category of work outputs

Repair the pieces with minor defects

To be competent, the user/individual on the job must be able to:

PC7. rectify minor defects like excess slag, shape deformation, sharp edges, rough surfaces, grooves, holes etc. by fettling, chipping, cutting, sawing, filling, shearing, hammering etc.

PC8.. escalate all issues related to change in color, surface properties,hardness etc. so that the manufacturing equipment can be reset to achieve the specified output

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards specified for the manufacturing process

KU2. basic process followed for inspection of the pieces

KU3. basic knowledge about the Quality Management policy and manual of the organization

KU4. techniques of using measurement instruments like rulers, Vernier calipers, micrometer, weighing scale, gauges and other inspection equipment

KU5. guidelines to identify quality defects in work pieces

KU6. used for cutting, shearing, hammering, drilling which can repair pieces with minor defects

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note the number of pieces with defects which can be repaired to number of pieces which will be discarded

GS2. read process and equipment manuals to understand the working of the equipment

GS3. read measuring instruments reading to identify any deviations from the dimensions given in the product engineering drawing

GS4. discuss task lists and job requirements with co-workers

GS5. effectively communicate information to team members

GS6. question operator/ supervisor in order to understand the nature of the problem

GS7. attentively listen with full attention and comprehend the information given by the speaker

GS8. plan and organize the work order and jobs received from the operator

GS9. organize all process/ equipment manuals so that sorting/ accessing information is easy

GS10. visualize the final job product after understanding the given drawing/ sketches

GS11. co relate the type of job output required with the casting methodology to be used

GS12. use common sense and make judgments during day to day basis

GS13. use reasoning skills to identify and resolve basic problems

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Inspection of finished goods to detect any deviations from the product design	**7**	**19**	**-**	**-**
PC1.. measure the specifications of the finished product using devices like micrometer, vernier calipers, gauges, rulers, weighing scales and any other inspection equipment and compare with the parameters given in the work order	3	9	-	-
PC2.. compare texture, color, surface properties, hardness and strength with the given product specifications	4	10	-	-
Record log of defective products and discard defective pieces	**12**	**37**	**-**	**-**
PC3. note down the observations of the basic inspection process and identify pieces which are ok and also not meeting the specified standards	3	8	-	-
PC4.. separate the defective pieces into two categories pieces which can be repaired/ modified and pieces which are beyond repair	3	10	-	-
PC5.. discard the pieces which are beyond repair and repair the ones which need minor modifications/ rework	3	10	-	-
PC6. maintain records of each category of work outputs	3	9	-	-
Repair the pieces with minor defects	**6**	**19**	**-**	**-**
PC7. rectify minor defects like excess slag, shape deformation, sharp edges, rough surfaces, grooves, holes etc. by fettling, chipping, cutting, sawing, filling, shearing, hammering etc.	3	10	-	-
PC8.. escalate all issues related to change in color, surface properties,hardness etc. so that the manufacturing equipment can be reset to achieve the specified output	3	9	-	-
NOS Total	**25**	**75**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0007
NOS Name	Conduct quality checks and inspection of the finished product
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	20/10/2018

ASC/N0008: Conduct regular cleaning and maintenance of the equipment

Description

This NOS is about systematically arranging the equipment in proper area, cleaning the process equipment & auxiliaries on a regular basis and doing basic level maintenance of the equipment, recording any problems related to equipment working

Scope

The role holder will be responsible for

- Storing the equipment in the proper condition
- Regular cleaning and maintenance of equipment and work area

Elements and Performance Criteria

Storing equipment in proper condition

To be competent, the user/individual on the job must be able to:

PC1.. arrange all equipment in a proper order as indicated in the equipment manual

PC2. . store equipment auxiliaries and spare parts in proper designated areas

PC3.. clearly tag process related equipment parts/ spare parts as per part number or serial number so that sorting of equipment becomes easy

PC4. cover equipment so that there is limited dust collection and moisture contact

Regular cleaning of the equipments and work area

To be competent, the user/individual on the job must be able to:

PC5. regularly clean the equipment and process auxiliaries to remove any dust, moisture, waste material which would have got collected on the equipment

PC6. regularly open the equipment and clean the internal parts of the equipment

PC7. regularly clean the working area under the process and create a healthy, clean and safe working environment

Conduct regular preventive maintenance of equipments

To be competent, the user/individual on the job must be able to:

PC8.. check the working of all bearing, rollers, shafts etc and oil all moving parts of the equipment on a periodic basis

PC9.. check the working of non moving parts and periodically conductpreventive maintenance to prevent machine failure

PC10. periodically check the equipment calibration and report any errors to the maintenance teams for rectification

Recording observations and preparing MIS

To be competent, the user/individual on the job must be able to:

PC11. prepare periodic log sheets of equipment maintenance dates, maintenance schedules and maintenance activity conducted on the equipment

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company for the process of maintenance and equipment storage

KU2. functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution

KU3. basic level maintenance and cleaning techniques

KU4. various solvents, chemicals, lubricants etc. used during the maintenance processes

KU5. procedure for arranging the equipment and spare parts in the prescribed manner including tagging and numbering of machine parts & spares

KU6. safety precautions to be taken during cleaning and maintenance activities

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. note equipment part codes, name tags etc. in the prescribed formats and records for the same

GS2. note observations related to equipment performance, breakdown, cleaning and maintenance schedules etc. in the prescribed MIS format

GS3. read equipment manuals and process documents to understand the equipment and processes better

GS4. read instructions especially safety instructions related to equipment cleaning and maintenance

GS5. discuss task lists and job requirements with co-workers

GS6. effectively communicate information to team members

GS7. listen and analyse any noise and vibrations in the equipment and report the same to the maintenance team for preventive action

GS8. attentively listen with full attention and comprehend the information given by the speaker

GS9. plan and organize the work order and jobs received from the Operator

GS10. organize all process/ equipment manuals so that sorting/ accessing information is easy as per the part/ machine number in the specified format in the designated area

GS11. use common sense and make judgments during day to day basis

GS12. use reasoning skills to identify and resolve basic problems

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Storing equipment in proper condition	**7**	**30**	**-**	**-**
PC1.. arrange all equipment in a proper order as indicated in the equipment manual	2	8	-	-
PC2. . store equipment auxiliaries and spare parts in proper designated areas	2	8	-	-
PC3.. clearly tag process related equipment parts/ spare parts as per part number or serial number so that sorting of equipment becomes easy	2	7	-	-
PC4. cover equipment so that there is limited dust collection and moisture contact	1	7	-	-
Regular cleaning of the equipments and work area	**6**	**22**	**-**	**-**
PC5. regularly clean the equipment and process auxiliaries to remove any dust, moisture, waste material which would have got collected on the equipment	2	8	-	-
PC6. regularly open the equipment and clean the internal parts of the equipment	2	7	-	-
PC7. regularly clean the working area under the process and create a healthy, clean and safe working environment	2	7	-	-
Conduct regular preventive maintenance of equipments	**6**	**21**	**-**	**-**
PC8.. check the working of all bearing, rollers, shafts etc and oil all moving parts of the equipment on a periodic basis	2	7	-	-
PC9.. check the working of non moving parts and periodically conductpreventive maintenance to prevent machine failure	2	7	-	-
PC10. periodically check the equipment calibration and report any errors to the maintenance teams for rectification	2	7	-	-
Recording observations and preparing MIS	**1**	**7**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. prepare periodic log sheets of equipment maintenance dates, maintenance schedules and maintenance activity conducted on the equipment	1	7	-	-
NOS Total	**20**	**80**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0008
NOS Name	Conduct regular cleaning and maintenance of the equipment
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	20/10/2018

ASC/N0021: Maintain 5S at the work premises

Description

This NOS is about ensuring all 5 S activities both at the shop floor and the office area to facilitate increase in work productivity

Elements and Performance Criteria

Ensure sorting

To be competent, the user/individual on the job must be able to:

PC1.. follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.

PC2.. ensure segregation of waste in hazardous/ non hazardous waste as per the sorting work instructions

PC3.. follow the technique of waste disposal and waste storage in the proper bins as per sop

PC4.. segregate the items which are labelled as red tag items for the process area and keep them in the correct places

PC5. sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions

PC6. . ensure that areas of material storage areas are not overflowing

PC7. properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required

PC8. return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area

PC9. follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards

PC10. follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists

Ensure proper documentation and storage (organizing , streamlining)

To be competent, the user/individual on the job must be able to:

PC11. check that the items in the respective areas have been identified as broken or damaged

PC12. follow the given instructions and check for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc

PC13. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions

Ensure cleaning of self and the work place

To be competent, the user/individual on the job must be able to:

PC14. check whether safety glasses are clean and in good condition

PC15. keep all outside surfaces of recycling containers are clean

PC16.. ensure that the area has floors swept, machinery clean and generally clean. in case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards

PC17.. check whether all hoses, cabling & wires are clean, in goodcondition and clamped to avoid any mishap or mix up

PC18.. ensure workbenches and work surfaces are clean and in good condition

PC19. follow the cleaning schedule for the lighting system to ensure proper illumination

PC20. store the cleaning material and equipment in the correct location and in good condition

PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene

Ensure sustenance

To be competent, the user/individual on the job must be able to:

PC22. follow the daily cleaning standards and schedules to create a clean working environment

PC23. attend all training programs for employees on 5 s

PC24. support the team during the audit of 5 s

PC25. participate actively in employee work groups on 5s and encourage team members for active participation

PC26. follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards, procedures and policies related to 5S followed in the company

KU2. have basic knowledge of 5S procedures

KU3. know various types 5s practices followed in various areas

KU4. understand the 5S checklists provided in the department/ team

KU5. have skills to identify useful & non useful items

KU6. have knowledge of labels , signs & colours used as indicators

KU7. knowledge on how to sort and store various types of tools, equipment, material etc.

KU8. know , how to identify various types of waste products

KU9. understand the impact of waste/ dirt/ dust/unwanted substances on the process/ environment/ machinery/ human body

KU10. have knowledge of best ways of cleaning & waste disposal

KU11. understand the importance of standardization in processes

KU12. understand the importance of sustainability in 5S

KU13. have knowledge of TQM process

KU14. have knowledge of various materials and storage norms

KU15. understand visual controls, symbols, graphs etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. write basic level notes and observations

GS2. note down observations (if any) related to the process

GS3. read 5S instructions put up across the plant premises

GS4. effectively communicate information to team members inform employees in the plant and concerned functions about 5S

GS5. question the process head in order to understand the 5S related issues

GS6. attentively listen with full attention and comprehend the information given by the speaker during 5S training programs

GS7. use common sense and make judgments during day to day basis

GS8. use reasoning skills to identify and resolve basic problems using 5S

GS9. persuade co team members to follow 5 S

GS10. ensure that the co team members understand the importance of using 5 S tool

GS11. use innovative skills to perform and manage 5 S activities at the work desk and the shop floor

GS12. exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work

GS13. do what is right, not what is a popular practices

GS14. follow shop floor rules& regulations and avoid deviations; make 5S an integral way of life

GS15. ensure self-cleanliness on a daily basis

GS16. demonstrate the will to keep the work area in a clean and orderly manner

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Ensure sorting	**10**	**30**	**-**	**-**
PC1.. follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.	1	3	-	-
PC2.. ensure segregation of waste in hazardous/ non hazardous waste as per the sorting work instructions	1	3	-	-
PC3.. follow the technique of waste disposal and waste storage in the proper bins as per sop	1	3	-	-
PC4.. segregate the items which are labelled as red tag items for the process area and keep them in the correct places	1	3	-	-
PC5. sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions	1	3	-	-
PC6. . ensure that areas of material storage areas are not overflowing	1	3	-	-
PC7. properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required	1	3	-	-
PC8. return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1	3	-	-
PC9. follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards	1	3	-	-
PC10. follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	1	3	-	-
Ensure proper documentation and storage (organizing , streamlining)	**3**	**9**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. check that the items in the respective areas have been identified as broken or damaged	1	3	-	-
PC12. follow the given instructions and check for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc	1	3	-	-
PC13. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	3	-	-
Ensure cleaning of self and the work place	**8**	**24**	**-**	**-**
PC14. check whether safety glasses are clean and in good condition	1	3	-	-
PC15. keep all outside surfaces of recycling containers are clean	1	3	-	-
PC16.. ensure that the area has floors swept, machinery clean and generally clean. in case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards	1	3	-	-
PC17.. check whether all hoses, cabling & wires are clean, in goodcondition and clamped to avoid any mishap or mix up	1	3	-	-
PC18.. ensure workbenches and work surfaces are clean and in good condition	1	3	-	-
PC19. follow the cleaning schedule for the lighting system to ensure proper illumination	1	3	-	-
PC20. store the cleaning material and equipment in the correct location and in good condition	1	3	-	-
PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene	1	3	-	-
Ensure sustenance	**4**	**12**	**-**	**-**
PC22. follow the daily cleaning standards and schedules to create a clean working environment	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. attend all training programs for employees on 5 s	0.5	2	-	-
PC24. support the team during the audit of 5 s	1	3	-	-
PC25. participate actively in employee work groups on 5s and encourage team members for active participation	0.5	2	-	-
PC26. follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions	1	2	-	-
NOS Total	**25**	**75**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0021
NOS Name	Maintain 5S at the work premises
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	28/04/2022
Next Review Date	03/11/2027
NSQC Clearance Date	03/11/2022

ASC/N3103: Understand welding job requirements and related processes

Description

This NOS is about understanding the welding job requirement, and the related materials/process/tools/equipment and standards.

Scope

This unit/ task covers the following:

- understanding the engineering drawing, specification , sketches and work order
- understanding about materials/process/tools/equipment in relation to welding

Elements and Performance Criteria

Understand the engineering drawings, sketches and work order

To be competent, the user/individual on the job must be able to:

PC1. . understand the work order (work output) required from the process and discuss the same with the operator

PC2. . refer all engineering drawings and sketches related to the work output to understand the measurement and shape of the required work output

PC3. . clearly understanding the does and donts of the manufacturing process as defined in SOPs/ work instructions or defined by supervisors

Escalations of queries on the given job

To be competent, the user/individual on the job must be able to:

PC4. . refer the queries to the operator/ welder if they cannot be resolved by the assistant welder on own

PC5.. obtain help or advice from specialist if the problem is outside his/her area of competence or experience

PC6. Confirm self - understanding to the Operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company

KU2. different types of products manufactured by the company

KU3. functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution

KU4. different types of welding processes and associated equipments

KU5. different types of joints

KU6. The method of reading and interpreting sketches and engineering drawings

KU7. how to visualize the final product output

KU8. the impact of various physical parameters like temperature, pressure, electrode distance on the properties of final output product like durability, ductility, surface feel etc.

KU9. basic principles of geometric and drawing

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare draft level drawings and charts

GS2. read equipment manuals and process documents to understand the equipments and processes better

GS3. read internal information documents send by internal customers (other functions within the organization)

GS4. prepare draft drawings for the final output product and share the same with the Welder/ operator

GS5. note down observations (if any) related to the welding process and share the same with welder and supervisor

GS6. discuss task lists and job requirements with team members

GS7. discuss with operator/ supervisor in order to understand the nature of the problem

GS8. attentively listen and comprehend the information given by the technician/team members

GS9. analyses a given situation and decide on an appropriate action for completing the task within resources

GS10. plan work assigned on a daily basis and provide estimates of time required for each piece of work

GS11. prioritize actions to achieve required outcomes

GS12. follow instructions and work on areas of improvement identified

GS13. complete the assigned tasks with minimum supervision

GS14. complete the job defined by the supervisor within the timelines and quality norms

GS15. meet or exceed internal and external customer/team expectations

GS16. analyses a problem and attempt to find an acceptable solution and take help of concerned people if required

GS17. visualize the final job product after understanding the given drawing/ sketches

GS18. co relate the type of job output required with the welding methodology to be used

GS19. ability to identify the strengths and weakness of various welding process

GS20. apply own judgement to identify solutions in different situations

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Understand the engineering drawings, sketches and work order	**15**	**36**	**-**	**-**
PC1. . understand the work order (work output) required from the process and discuss the same with the operator	5	12	-	-
PC2. . refer all engineering drawings and sketches related to the work output to understand the measurement and shape of the required work output	5	12	-	-
PC3. . clearly understanding the does and donts of the manufacturing process as defined in SOPs/ work instructions or defined by supervisors	5	12	-	-
Escalations of queries on the given job	**15**	**34**	**-**	**-**
PC4. . refer the queries to the operator/ welder if they cannot be resolved by the assistant welder on own	5	12	-	-
PC5.. obtain help or advice from specialist if the problem is outside his/her area of competence or experience	5	11	-	-
PC6. Confirm self - understanding to the Operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution	5	11	-	-
NOS Total	**30**	**70**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3103
NOS Name	Understand welding job requirements and related processes
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	31/12/2015

ASC/N3104: Prepare the welding machine for the welding process

Description

The NOS is about selecting the appropriate electrode and filler material for the welding process, on basis of work order, preparing the surface of the metal parts by removing dust, moistures, rough edges, cleaning the welding apparatus and installing the metal part on the welding machine/assembly block.

Scope

This unit/ task covers the following:

- Assistant Welder will be responsible for:
- Understand the engineering drawing, sketches and work order
- Arranging the electrodes and other material required for the welding process in the correct place
- Cleaning and maintaining the welding apparatus

Elements and Performance Criteria

Arrange for the electrodes, flux, filler material as per the requirement of the welding process

To be competent, the user/individual on the job must be able to:

PC1. . discuss with the operator right welding methodology and process to be adopted for completing the work order

PC2.. discuss the various welding parameters like temperature, pressure, electrode type, electrode distance (gap), Welding current, voltage, process time etc. Before starting the welding process

PC3. . discuss the material required and the equipment availability for executing the activity with the team members

PC4. . discuss with the operator on the type of electrode material and thickness, filler material and flux to be used for the welding process

PC5. . ensure that the required material is procured from the store before starting the welding process

Clean the welding equipment before executing the welding process and setup the equipment

To be competent, the user/individual on the job must be able to:

PC6. clean the surface of the electrodes and the welding gun and remove dust or any other impurities

PC7.. clean other welding machine auxiliaries (welding transformer, gas discharge unit, flux wire) before the initiation of the welding process

PC8.. setup the welding apparatus as per process standard and the work instruction

Prepare the surface of the part (work pieces) on which welding needs to be conducted

To be competent, the user/individual on the job must be able to:

PC9. . clean the surface to the metal parts (work pieces) which need to be joint

PC10. . remove any extra material, sharp edges etc. which might impact the final welded product

PC11. . ensure the work pieces available for welding is in line with the product drawing/ sketches available with the operator

PC12. . in case the parts are not as per the given measurements, remove extra material by using chippers, grinders etc.

Escalations of queries for the given job

To be competent, the user/individual on the job must be able to:

PC13.. immediately refer the queries to an operator and the supervisor

PC14.. Confirm self-understanding to the operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company

KU2. different types of products manufactured by the company

KU3. different types of welding processes and associated equipment

KU4. different cleaning methods for electrodes, metal surfaces etc.

KU5. how to use measuring instruments like vernier,calipers, micrometer

KU6. different types of joints

KU7. how to read and interpret sketches and engineering drawings

KU8. basic principles of geometric and drawing

KU9. materials used in welding & key properties

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret engineering drawing and sketches

GS2. read equipment manuals and process documents to understand the equipment and processes better

GS3. read internal information documents send by internal customers (other functions within the organization)

GS4. prepare draft drawings for the final output product and share the same with the Welder/ operator

GS5. note down observations (if any) related to the welding process and share the same with welder and supervisor]

GS6. discuss task lists and job requirements with team members

GS7. discuss with operator/ supervisor in order to understand the nature of the problem

GS8. attentively listen and comprehend the information given by the technician/team members

GS9. analyses a given situation and decide on an appropriate action for completing the task within resources

GS10. plan work assigned on a daily basis and provide estimates of time required for each piece of work

GS11. prioritize actions to achieve required outcomes

GS12. follow instructions and work on areas of improvement identified

GS13. complete the assigned tasks with minimum supervision

GS14. complete the job defined by the supervisor within the timelines and quality norms

GS15. meet or exceed internal and external customer/team expectations

GS16. analyses a problem and attempt to find an acceptable solution and take help of concerned people if required

GS17. visualize the final job product after understanding the given drawing

GS18. sketches

GS19. co relate the type of job output required with the welding methodology to be used

GS20. identify the strengths and weakness of various welding process

GS21. apply own judgement to identify solutions in different situations

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Arrange for the electrodes, flux, filler material as per the requirement of the welding process	**14**	**26**	**-**	**-**
PC1. . discuss with the operator right welding methodology and process to be adopted for completing the work order	3	5	-	-
PC2.. discuss the various welding parameters like temperature, pressure, electrode type, electrode distance (gap), Welding current, voltage, process time etc. Before starting the welding process	3	5	-	-
PC3. . discuss the material required and the equipment availability for executing the activity with the team members	3	5	-	-
PC4. . discuss with the operator on the type of electrode material and thickness, filler material and flux to be used for the welding process	3	5	-	-
PC5. . ensure that the required material is procured from the store before starting the welding process	2	6	-	-
Clean the welding equipment before executing the welding process and setup the equipment	**4**	**20**	**-**	**-**
PC6. clean the surface of the electrodes and the welding gun and remove dust or any other impurities	1	6	-	-
PC7.. clean other welding machine auxiliaries (welding transformer, gas discharge unit, flux wire) before the initiation of the welding process	1	5	-	-
PC8.. setup the welding apparatus as per process standard and the work instruction	2	9	-	-
Prepare the surface of the part (work pieces) on which welding needs to be conducted	**5**	**23**	**-**	**-**
PC9. . clean the surface to the metal parts (work pieces) which need to be joint	1	5	-	-
PC10. . remove any extra material, sharp edges etc. which might impact the final welded product	1	5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. . ensure the work pieces available for welding is in line with the product drawing/ sketches available with the operator	2	8	-	-
PC12. . in case the parts are not as per the given measurements, remove extra material by using chippers, grinders etc.	1	5	-	-
Escalations of queries for the given job	**2**	**6**	**-**	**-**
PC13.. immediately refer the queries to an operator and the supervisor	1	3	-	-
PC14.. Confirm self-understanding to the operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution	1	3	-	-
NOS Total	**25**	**75**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3104
NOS Name	Prepare the welding machine for the welding process
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	31/12/2015

ASC/N3105: Support the Welder in the Welding Process

Description

This NOS is about supporting the operator and the manufacturing team in welding processes.

Scope

This unit/ task covers the following:

- Assistant Welder will be responsible for:
- installing the welding work pieces on the apparatus
- check the operations of the machine and assist the welding process
- recording the observations during the process
- escalations of any queries regarding the job

Elements and Performance Criteria

Installing the welding work pieces on the welding apparatus

To be competent, the user/individual on the job must be able to:

PC1. . hold the parts which need to be welded together using a clamp and align them with the electrodes as per the job requirement so that the work pieces do not fall down/ turn

PC2. . install the work pieces on the Welding apparatus keeping in mind the electrodes distance, contact area, pressure, temperature application etc. as specified in the Welding process/work instructions

Check the operations of the welding machines and auxiliaries and conduct a test process

To be competent, the user/individual on the job must be able to:

PC3. . check for operation of core welding equipment like welding gun, welding transformer, gas cylinders, gas discharge units as per welding process/work instructions

PC4. . support the operator in conducting destructive and non destructive test activity

Conduct the actual welding process

To be competent, the user/individual on the job must be able to:

PC5.. support the operator in the gas discharge welding by holding the welding gun and the filler material/ gas discharge

Check measurement instruments for monitoring welding process parameters

To be competent, the user/individual on the job must be able to:

PC6.. help the welder in monitoring the welding process (pressure, temperature, gas discharge flow, electrode force, electrode distance etc.) by observing and communicating the readings on various panels/ meters at the right time to prevent any harm to the work pieces due to overheating, burning, over melting

Measure the two parts (work pieces) welded and remove welding inconsistency

To be competent, the user/individual on the job must be able to:

PC7. . measure the final welded piece and compare the dimensions as prescribed in the work order engineering drawing

PC8.. in case the parts are not as per the given measurements, remove extra material by using chippers, grinders etc.

PC9. . if there are any bulges, then hammer the bulges and give the work pieces the desired shape

PC10.. keep the operator informed of any inconsistency in the welding process, quality issues etc. so that the same can be dealt immediately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company

KU2. different types of products manufactured by the company

KU3. different types of welding processes and associated equipment

KU4. different cleaning methods for electrodes, metal surfaces etc.

KU5. measuring instruments like Vernier calipers, micrometer

KU6. different types of joints used in welding

KU7. how to read and interpret sketches and engineering drawings

KU8. how to visualize the final product output and hence decide on the key steps to be followed for welding activities

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and interpret engineering drawing and sketches

GS2. read equipment manuals and process documents to understand the equipment and processes better

GS3. read internal information documents send by internal customers (other functions within the organization)the equipment in the plant area

GS4. read parameter reading on various types of monitoring panels

GS5. document information from the sketches and engineering drawings

GS6. note measurements, equipment panel readings for various process parameters in the required reporting formats

GS7. discuss task lists, schedules and activities with the operator and supervisor

GS8. effectively communicate with the team members Question the operator/ welding shop supervisor in order to understand the nature of the problem and to clarify queries

GS9. attentively listen with full attention and comprehend the information given by the speaker

GS10. analyses a given situation and decide on an appropriate action for completing the task within resources

GS11. plan work assigned on a daily basis and provide estimates of time required for each piece of work

GS12. prioritize actions to achieve required outcomes SB4. follow instructions and work on areas of improvement identified

GS13. complete the assigned tasks with minimum supervision

GS14. complete the job defined by the supervisor within the timelines and quality norms

GS15. meet or exceed internal and external customer/team expectations

GS16. analyses a problem and attempt to find an acceptable solution and take help of concerned people if required

GS17. analyses the complexity of work to determine how it can be successfully carried out

GS18. anticipate and analyses a given situation from all aspects

GS19. apply own judgement to identify solutions in different situations

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Installing the welding work pieces on the welding apparatus	**4**	**16**	**-**	**-**
PC1. . hold the parts which need to be welded together using a clamp and align them with the electrodes as per the job requirement so that the work pieces do not fall down/ turn	2	7	-	-
PC2. . install the work pieces on the Welding apparatus keeping in mind the electrodes distance, contact area, pressure, temperature application etc. as specified in the Welding process/work instructions	2	9	-	-
Check the operations of the welding machines and auxiliaries and conduct a test process	**4**	**17**	**-**	**-**
PC3. . check for operation of core welding equipment like welding gun, welding transformer, gas cylinders, gas discharge units as per welding process/work instructions	2	8	-	-
PC4. . support the operator in conducting destructive and non destructive test activity	2	9	-	-
Conduct the actual welding process	**2**	**8**	**-**	**-**
PC5.. support the operator in the gas discharge welding by holding the welding gun and the filler material/ gas discharge	2	8	-	-
Check measurement instruments for monitoring welding process parameters	**2**	**9**	**-**	**-**
PC6.. help the welder in monitoring the welding process (pressure, temperature, gas discharge flow, electrode force, electrode distance etc.) by observing and communicating the readings on various panels/ meters at the right time to prevent any harm to the work pieces due to overheating, burning, over melting	2	9	-	-
Measure the two parts (work pieces) welded and remove welding inconsistency	**8**	**30**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC7. . measure the final welded piece and compare the dimensions as prescribed in the work order engineering drawing	2	8	-	-
PC8.. in case the parts are not as per the given measurements, remove extra material by using chippers, grinders etc.	2	8	-	-
PC9. . if there are any bulges, then hammer the bulges and give the work pieces the desired shape	2	8	-	-
PC10.. keep the operator informed of any inconsistency in the welding process, quality issues etc. so that the same can be dealt immediately	2	6	-	-
NOS Total	**20**	**80**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3105
NOS Name	Support the Welder in the Welding Process
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	31/12/2015

ASC/N3106: Remove the finished goods and store them in the designated place

Description

This unit is about unloading the finished goods from the production lineand store them properly in the designated area for moving to the nextoperation

Scope

This unit/ task covers the following:

- Assistant Welder will be responsible for:
- unloading the finished goods from the bin/trolley
- storing the finished goods in the proper designated location

Elements and Performance Criteria

Unload the Finished Goods

To be competent, the user/individual on the job must be able to:

PC1. . depending on the shape/weight of the output select a suitable method for movement

PC2. . clamp the product and lift the output object using suitable equipment like hoist, lifts, crane etc.

PC3. . ensure that there is no damage to the lifted work pieces

PC4. . carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc.

Store the finished goods

To be competent, the user/individual on the job must be able to:

PC5. . post inspection process, tag the right quality pieces for future identification

PC6. . carry the tagged pieces to the storage areas using suitable method of movement means

PC7. . keep a record of the finished goods along with the storage identification numbers for easy sorting

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. relevant standards and procedures followed in the company

KU2. functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution

KU3. basic level operations of lifting equipment like hoists, cranes, pulley etc.

KU4. methods of storage and tagging of final product

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read equipment manuals and process documents

GS2. read safety instructions related to movement of goods

GS3. note equipment part codes, name tags etc. in the prescribed formats and records for the same

GS4. note observations related to movement and storage of final product

GS5. discuss task lists and job requirements with team members

GS6. listen and analyses any noise and vibrations in the equipment and report the same to the maintenance team for preventive action

GS7. attentively listen and comprehend the information given by the technician and team members

GS8. analyses a given situation and decide on an appropriate action for completing the task within resources

GS9. plan work assigned on a daily basis and provide estimates of time required for each piece of work

GS10. prioritize actions to achieve required outcomes

GS11. follow instructions and work on areas of improvement identified

GS12. complete the assigned tasks with minimum supervision

GS13. complete the job defined by the supervisor within the timelines and quality norms

GS14. meet or exceed internal and external customer/team expectations

GS15. analyses a problem and attempt to find an acceptable solution and take help of concerned people if required

GS16. analyses the complexity of work to determine how it can be successfully carried out

GS17. anticipate and analyses a given situation from all aspects

GS18. apply own judgement to identify solutions in different situations

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Unload the Finished Goods	**12**	**46**	**-**	**-**
PC1. . depending on the shape/weight of the output select a suitable method for movement	3	11	-	-
PC2. . clamp the product and lift the output object using suitable equipment like hoist, lifts, crane etc.	3	12	-	-
PC3. . ensure that there is no damage to the lifted work pieces	3	11	-	-
PC4. . carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc.	3	12	-	-
Store the finished goods	**8**	**34**	**-**	**-**
PC5. . post inspection process, tag the right quality pieces for future identification	3	12	-	-
PC6. . carry the tagged pieces to the storage areas using suitable method of movement means	3	12	-	-
PC7. . keep a record of the finished goods along with the storage identification numbers for easy sorting	2	10	-	-
NOS Total	**20**	**80**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3106
NOS Name	Remove the finished goods and store them in the designated place
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	31/12/2015

ASC/N6301: Inspect and maintain the product quality

Description

This OS unit is about the individual monitoring and maintaining the quality of theproducts

Scope

The unit/ task covers the following for Receipt, In Process , Final Inspection:

- pre
- delivery inspection of the product
- dock audit / Development batch of product
- coordinate with R&D QA for failures, CAPA & CI issues

Elements and Performance Criteria

Inspection of final product

To be competent, the user/individual on the job must be able to:

PC1.. conduct the process of Inspection at the stages : complete dimensional /Layout Inspection at development stage & later as per the periodicity such as annual for re- validation in the Production phase as per the CP/ Quality plan/ sampling Plan/ stage inspection plans/ First off IR

PC2.. handle Inspection equipment and Instruments such as vernier, micrometers height Gauge & surface plate acceptance/ Combination Gauges simple gauges bore, air , profile for safe storage, calibration at pre-decided frequency and have an acceptable level of R & R as per SOP of the organization

PC3.. conduct a inspection of the product covering the following checkpoints: visual Inspection of the part for scratches, dents , damages, packing as per the norms etc. special inspection co-ordinated with other agencies e.g. Lab :Material, Lab: Standards Room, assembly / performance trials etc. identification sticker/number/label placed on the product functioning of the product and its components documentation pertaining to the Quality

PC4.. coordinate with the respective process owners / seniors in qa and implement capa for discrepancies in the parameters identified in the report on immediate basis

PC5.. participate in checking the effectiveness of implementation and repeat the process till the discrepancies are resolved

PC6.. document the observations of the inspection and maintain records of

PC7.. ir, erp-system record and special process capability index calculation/ charting as per the sop raise a scrap note and dispose off the scrapped product in the scrap yard as per the defined procedure maintaining the hse compliance

PC8.. as is the case i.e. new product/process development / production phase , the reports and part submission warrant, ppap are to be prepared.

PC9.. based on the implementation of information flow system in organization like erp/sap , upload the reports

Dock audit of the sample batch

To be competent, the user/individual on the job must be able to:

PC10.. conduct a dock audit of a sample batch from the production lot of the ready to dispatch final products covering the following checkpoints : product in good shape with no visible damage presence of sharp edges in the product wear and tear of the product presence of any physical defects packaging of product according to customer specification packaging boxes as per the requirement for preservation customer PO Number on the shipping labels boxes labeled correctly with packer name count on the Bill of Lading match the count on the pallet boxes stacked neatly in case of pallet arrangement damages of the pallet like nails sticking out, broken boards, etc

PC11.. coordinate with the respective process owners/stores and implement capa for discrepancies identified in the dock audit on immediate basis

PC12.. review the effectiveness of implementation and repeat the process till the discrepancies are resolved

PC13.. document the observations of dock audit and maintain records

PC14.. based on the implementation of information flow system in organization like erp/sap , upload the reports

Coordination with R&D / Quality Manager CAPA , CI

To be competent, the user/individual on the job must be able to:

PC15.. work as a cft member of the team formed for solving a problem pertaining to the products handled .collect data regarding the problem as decided in the team discussions

PC16.. participate for preparation of fault tree, conducting simulation and implementation of actions

PC17.. participate for updating relevant documentation

PC18.. assist the npd department in efficient development of the new product by sharing all the problems related to qcd observed in the existing products

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. product portfolio of organization

KU2. the manufacturing processes of organization

KU3. material classification criteria followed by organization

KU4. policies and procedures for storage and preservation of materials

KU5. policies , compliances and systems followed for HSE

KU6. TS-16949/any other QMS system guidelines followed in the organization

KU7. New Process/Product development protocol and methodology

KU8. manufacturing process being followed for each product

KU9. inspection checkpoints NPD, Production, Dock Audit etc.

KU10. APQP procedures

KU11. problem solving & analysis tools like 8Ds, five why analysis etc.

KU12. RCA analysis techniques

KU13. requirements for PPAP-PFMEA,CP

KU14. requirements for TS-16949/QMS system followed

KU15. rejection / Inspection reports

KU16. testing equipments operational knowledge

KU17. resource & information systems like SAP, ERP etc

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. document the observations in the inspection format using precise terms for description of the defects , phenomenon etc.

GS2. understand the contents mentioned on the identification sticker

GS3. prepare reports/excel sheet/MIS for review of quality manager and senior management

GS4. the concerned departments for failures/any issues

GS5. NPD department for new product development

GS6. concerned departments for dock audit and resolution of the discrepancies observed

GS7. senior management for updating the progress and seeking their support

GS8. team members for reviewing the progress of day to day activities

GS9. work as an effective team members ensuring smooth execution of the inspection of the product in an efficient and timely manner

GS10. coordinate with various departments like NPDCFT , Marketing, R&D etc. based on the requirement

GS11. share operation knowledge with colleagues

GS12. coordinate with the process owners and devise countermeasures for effective handling of the non-conformities observed in IR and dock audit

GS13. understand and analyze the inspection report for providing inputs to NPD department for new product development

GS14. interpret the customer (Internal / external) feedback and translate it into the development of the new product in coordination with NPD department

GS15. identify problems (technical and non-technical), disruptions and delays

GS16. think through and devise the countermeasure for resolution for any quality related issue observed

GS17. work on actions to be taken on immediate basis in case of frequent rejections

GS18. devise and implement interim/permanent countermeasures for the nonconformities observed in the field failures/warranty issues using analysis tools like 4Ds , 8Ds etc.

GS19. analyze the interim countermeasures taken for the resolution of nonconformities observed in the product inspection and dock audit to accordingly devise the permanent countermeasures for prevention from re-occurrence

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Inspection of final product	**18**	**43**	**-**	**-**
PC1.. conduct the process of Inspection at the stages : complete dimensional /Layout Inspection at development stage & later as per the periodicity such as annual for re- validation in the Production phase as per the CP/ Quality plan/ sampling Plan/ stage inspection plans/ First off IR	2	7	-	-
PC2.. handle Inspection equipment and Instruments such as vernier, micrometers height Gauge & surface plate acceptance/ Combination Gauges simple gauges bore, air , profile for safe storage, calibration at pre-decided frequency and have an acceptable level of R & R as per SOP of the organization	2	7	-	-
PC3.. conduct a inspection of the product covering the following checkpoints: visual Inspection of the part for scratches, dents , damages, packing as per the norms etc. special inspection co-ordinated with other agencies e.g. Lab :Material, Lab: Standards Room, assembly / performance trials etc. identification sticker/number/label placed on the product functioning of the product and its components documentation pertaining to the Quality	2	7	-	-
PC4.. coordinate with the respective process owners / seniors in qa and implement capa for discrepancies in the parameters identified in the report on immediate basis	2	5	-	-
PC5.. participate in checking the effectiveness of implementation and repeat the process till the discrepancies are resolved	2	5	-	-
PC6.. document the observations of the inspection and maintain records of	2	3	-	-
PC7.. ir, erp-system record and special process capability index calculation/ charting as per the sop raise a scrap note and dispose off the scrapped product in the scrap yard as per the defined procedure maintaining the hse compliance	2	3	-	-
PC8.. as is the case i.e. new product/process development / production phase , the reports and part submission warrant, ppap are to be prepared.	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9.. based on the implementation of information flow system in organization like erp/sap , upload the reports	2	3	-	-
Dock audit of the sample batch	**8**	**16**	**-**	**-**
PC10.. conduct a dock audit of a sample batch from the production lot of the ready to dispatch final products covering the following checkpoints : product in good shape with no visible damage presence of sharp edges in the product wear and tear of the product presence of any physical defects packaging of product according to customer specification packaging boxes as per the requirement for preservation customer PO Number on the shipping labels boxes labeled correctly with packer name count on the Bill of Lading match the count on the pallet boxes stacked neatly in case of pallet arrangement damages of the pallet like nails sticking out, broken boards, etc	2	4	-	-
PC11.. coordinate with the respective process owners/stores and implement capa for discrepancies identified in the dock audit on immediate basis	2	4	-	-
PC12.. review the effectiveness of implementation and repeat the process till the discrepancies are resolved	2	4	-	-
PC13.. document the observations of dock audit and maintain records	1	2	-	-
PC14.. based on the implementation of information flow system in organization like erp/sap , upload the reports	1	2	-	-
Coordination with R&D / Quality Manager CAPA , CI	**4**	**11**	**-**	**-**
PC15.. work as a cft member of the team formed for solving a problem pertaining to the products handled .collect data regarding the problem as decided in the team discussions	1	3	-	-
PC16.. participate for preparation of fault tree, conducting simulation and implementation of actions	1	3	-	-
PC17.. participate for updating relevant documentation	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC18.. assist the npd department in efficient development of the new product by sharing all the problems related to qcd observed in the existing products	1	3	-	-
NOS Total	**30**	**70**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6301
NOS Name	Inspect and maintain the product quality
Sector	Automotive
Sub-Sector	Manufacturing Support
Occupation	Quality Assurance
NSQF Level	3
Credits	TBD
Version	1.0
Next Review Date	30/07/2015

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 65

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N0006.Maintain a safe and healthy working environment	25	75	-	-	100	10
ASC/N0007.Conduct quality checks and inspection of the finished product	25	75	-	-	100	10
ASC/N0008.Conduct regular cleaning and maintenance of the equipment	20	80	-	-	100	10
ASC/N0021.Maintain 5S at the work premises	25	75	-	-	100	10
ASC/N3103.Understand welding job requirements and related processes	30	70	-	-	100	12
ASC/N3104.Prepare the welding machine for the welding process	25	75	-	-	100	12
ASC/N3105.Support the Welder in the Welding Process	20	80	-	-	100	12
ASC/N3106.Remove the finished goods and store them in the designated place	20	80	-	-	100	12
ASC/N6301.Inspect and maintain the product quality	30	70	-	-	100	12
Total	**220**	**680**	**-**	**-**	**900**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.