Automotive Skills Development Council

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR AUTOMOTIVE INDUSTRY

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What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack-Machine Shop Master Technician / Setter

SECTOR: AUTOMOTIVE

SUB-SECTOR: MANUFACTURING

OCCUPATION: MACHINING

JOB ROLE: MACHINE SETTER

REFERENCE ID: ASC/Q3506

ALIGNED TO: NCO-2004/7223.10/7223.90

Machine Setter: Also known as Master Technician, the role entails manufacturing products through supervising staff, organizing and monitoring work flow for various machining processes including displaying process understanding, ensuring compliance and team management, setting up parameters, programming for CNC and other manual machining processes

Brief Job Description: The role covers setting parameters and programming of CNC and other machining equipment's, supervision of operations for different machine tools performed both manually and through automatic/ CNC machines/ robots. This role primarily involves setting machine parameters, supervising all kinds of machining and in-line inspection activities for quality verification, resolving line operation issues, ensuring compliance to all super finishing, tool room operations etc.

Personal Attributes: The individual should have detailed orientation towards the requisite process for the line, ensure effective management of the team, sensitivity to problem solving, quick decision making, ability to motivate others, skillsand sensitivity towards safety for self and equipment used, ERP processes etc.

Job Details

Qualifications Pack Code	**ASC/Q3506**		
Job Role	**Machine Setter**		
Credits(NSQF)	**TBD**	**Version number**	**1.0**
Industry	**Automotive**	**Drafted on**	**20/12/2013**
Sub-sector	**Manufacturing**	**Last reviewed on**	**25/12/2013**
Occupation	**Machining**	**Next review date**	**Under revision expected date of revised version 31-Dec-15**
NSQC Clearance on	**05/08/15**		

Job Role	**Machine Setter**
Role Description	The role covers setting parameters and programming of CNC and other machining equipment's, supervision of operations for different machine tools performed both manually and through automatic/ CNC machines/ robots. The role also involves setting machine parameters, supervising all kinds of machining and in-line inspection activities for quality verification, resolving line operation issues, ensuring compliance to all super finishing, tool room operations etc.
NSQF level **Minimum Educational Qualifications** **Maximum Educational Qualifications**	6 Diploma in Mechanical Engineering B.E./B.Tech in Mechanical Engineering/ Metallurgy
Training (Suggested but not mandatory)	• Different types of machining activities (like Turning, Milling, Grinding, Boring, Broaching, Honing, Facing, Shaping, Blanking, Shaving, Hobbing etc.) and usage of fixtures tools etc. • 5S and Safety • Process Documentation • IT and ERP Awareness • Quality Management Systems
Minimum Job Entry Age	1 ASDC recommends that candidates should seek fullemployment not before attaining an age of 18 years. 2 However, as per Factories Act1948 : - No one can be employed before attaining the age of 15 - A person between the age of 15 – 18 (both inclusive) could be employed only with employers who follow safetyand security systems & processes and also that theemployee in this bracket will be working undersupervision. 3 Please note that under the Factories Act 1948, differentStates may have slightly varying provision which need to be adhered to
Experience	4-5 years in various machining activities for diploma holders
Occupational Standards (OS)	ASC/N3511: Ensure compliance towards different stages of machining operations, CNC programming, and machine setting ASC/N0016: Understand process requirements, ensure

	implementation and suggest process improvements ASC/N0017: Manage and analyze production related operations of the shift/ line on a day to day basis ASC/N0018Finalize and manage the team on the line/ shift on a day to day basis ASC/ N0006: Maintain a safe and healthy working environment ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area **Optional:** N.A.
Performance Criteria	As described in the relevant NOS units

Definitions

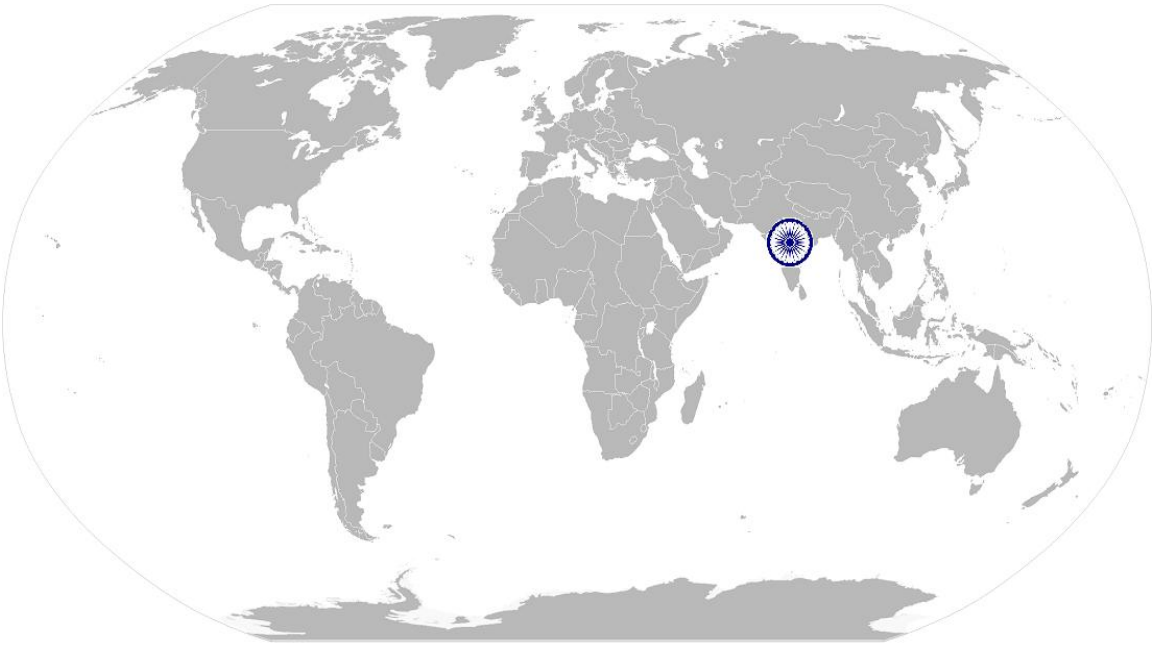
Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the 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 the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with an '**N**'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.

Acronyms

Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack
5 S	Technique of maintaining orderliness –Japanese terminology
CP	Control Plan
WI	Work Instructions

National Occupational Standards



Overview

This Occupational Standard describes the knowledge, understanding and skills required of an individual to ensure compliance towards different stages of machining operations, CNC Programming & Machine Setting

ASC/N3511 **Ensure compliance towards different stages of machining operations, CNC Programming & Machine Setting**

National Occupational Standard

Unit Code	ASC/N3511
Unit Title (Task)	**Ensure compliance towards different stages of machining operations, CNC Programming & Machine Setting**
Description	This NOS is about ensuring compliance towards different stages of machining operations, CNC Programming & Machine Setting
Scope	The Machine Setter is responsible to: • Ensure compliance towards stages of machining operations • Ensure setting up of the CNC machine parameters • Ensure compliance to machine setting operations The role holder will be responsible for interacting with assembly line, Heat Treatment, Materials Management, Maintenance, Quality Control and Assurance teams
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Ensure compliance towards all stages of machining operations	PC1. Ensure that the machining operator understands the task at hand PC2. Ensure that the team members understand and follow all the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors/ master technicians PC3. Ensure that the operator understands the machining and tooling requirements -fixtures, etc. and the type of coolants PC4. Observe the machine operations for any malfunctions to detect defects in the component manufactured inform the maintenance team of any malfunction observed to prevent damage to the machining equipment/output product PC5. Ensure recording operational data is being done such as pressure readings, length of strokes, feed rates, speed etc. in the formats specified PC6. Ensure tool replacement as per recommended tool life in no. of pieces and that the machine is maintained as per proper operational condition/daily maintenance check PC7. Perform minor repairs and adjustments to the machine and notify maintenance team when major service/repair is required . PC8. Ensure all de-burring processes are complete through the use of the correct tool to remove the extra burrs, sharp edges, rust and chips from the metal surface PC9. Ensure that the operator is using devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment for measuring specifications with valid calibration status PC10. Ensure that calibration points are sent to the in-house agencies/ external as applicable PC11. Ensure changing different worn machine accessories, such as cutting/ grinding/ broaching/hobbing tools (as per tool life listed, recommended) other hand tools PC12. Ensure removal of chips is completed by the operator from different machine areas and dispose of scrap or waste material into the disposal area in accordance with the company policies and environmental regulations PC13. Ensure changing different worn machine accessories, such as burnishing,

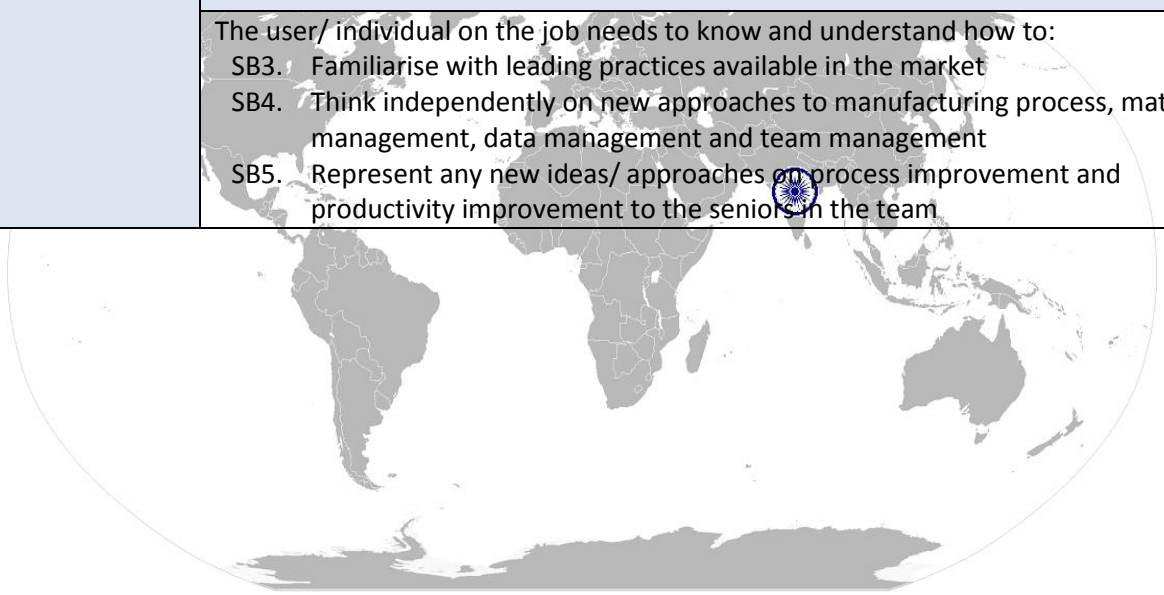
	lapping, buffing tools (as per tool life listed, recommended) other hand tools PC14. Verify the production and material movement related data entries in the system (manual/ ERP) for the line/ shift and ensure correctness of the data PC15. Ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ Work Plans so that production targets are met for the line/ shift PC16. Ensure that suitable precautions are taken by the team while operating machining tools, EDM and wire cutting tool , various tools for cutting and grinding operations, assembly tools and lifting equipment etc.
Ensure setting up of the CNC machine parameters	PC17. Analyse in detail the 3D CAD drawings and other engineering drawings, sketches, work orders, circuit diagrams etc. to determine the type of product output including Shape, Geometric Dimensions and Tolerance and Product Surface PC18. Determine the overall process and process parameters like tool type, tool speed, feed rate as required to execute the work order PC19. Define the sequence of operations of the various machine tools as determined in the overall process PC20. Determine reference points, Zero point, radial distance, angular distance, curvatures, path of movement of tools etc. by applying basic rules of geometry and trigonometry PC21. Ensure accurate calculation of hole distances, hole coordinates and dimensions as per the Work Orders/ SOPs PC22. Ensure geometrical configurations , alignments for fixture/ machine axes as given in the setting instructions. PC23. Load the program into the relevant machine and set the machine parameters based on the program settings PC24. Conduct trial tests or simulations to validate the results of the fed program on the machine operations and the overall product output PC25. Revise the program settings as per the test result and feed the revised program in the CNC operated machine PC26. Retest the machine observation and ensure conformance with the desired outcome as given in SOP, First piece Inspection etc.
Ensure compliance to machine setting operations	PC27. Ensure correct calculation of machine operating parameters which will be entered in the machine controllers PC28. Using CNC programming techniques, machine controller programming techniques, ensure that the correct program is written and selected for machine operations PC29. Ensure that the programming covers all machine parameters like temperature, pressure, part movement, cycle time, required current & voltage, raw material feed rate, coolant flow, lubricant flow etc. as per the equipment operating guidelines PC30. Ensure that the program entered the machine is as per the loading criteria for the machine and that the machine is able to carry the operations at 100 % effectiveness PC31. Ensure conducting a test process after every change in the machine setting to ensure that the setting is in line with the final process outcomes

ASC/N3511 **Ensure compliance towards different stages of machining operations, CNC Programming & Machine Setting**

Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. relevant manufacturing standards and procedures followed in the company KA2. different types of products manufactured by the company KA3. functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution KA4. quality norms and standards prescribed in the Quality Manual by the organization for welding KA5. 5S and Safety norms practiced in the organization
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. different types of machining processes KB2. basic fundamentals of machines and mechanics KB3. different types of tools used in the machining process with respect to type of process to be conducted KB4. basic principles of 5 S in manufacturing – Cleaning, sorting, etc. KB5. the application of coolant and lubricants and their properties KB6. Impact of various machining processes on the final product outcome KB7. basic Arithmetic and calculation methods for tolerance limits KB8. metallurgical properties of metals used for machining KB9. the methods of using instruments like Verniercallipers,Micrometres, rulers and other inspection tools KB10. various National and International machining standards used inautomotive sector in India KB11. how to read and interpret sketches and engineering drawings KB12. how to visually represent the final product output and hence decide on the key steps to be followed for machining KB13. safety guidelines related to different machines
Skills (S) w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	**Writing skills and reading Skills**
	The user/ individual on the job needs to know and understand how to: SA1. create first level process manuals, Control Plans, Work Instructions in an manner that the operators can easily understand the process requirements and process steps SA2. create small notes/ work documents/ diagrams for supervisors ,operators and helpers to help them understand the process SA3. use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc. SA4. read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
	Oral Communication (Listening and Speaking skills)

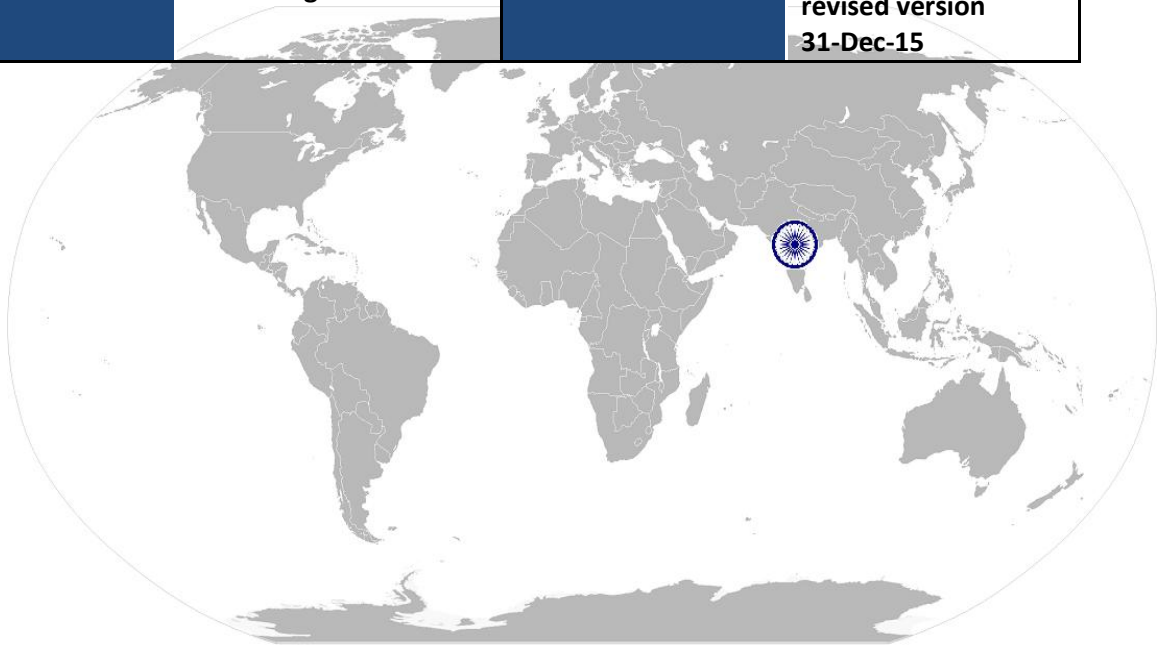
	The user/individual on the job needs to know and understand how to: SA5. discuss task lists, schedules, and work-loads with the operative team members SA6. effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements SA7. answer the queries raised by the operative team as well as intercompany departments SA8. effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc. SA9. attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
B. Professional Skills	**Analytical thinking**
	The user/individual on the job needs to know and understand how to: SB1. break the problem into smaller issues and tasks to arrive at a solution SB2. understand inter process relationship and establish relationship between various parts of the problem SB3. leverage experience to find effective solutions to problems SB4. use basic analytical tools to arrive at solutions
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB5. plan, organize and prioritize the work order and jobs received from the production manager SB6. manage the schedule plan for the operators and helpers on the line/shift SB7. validate all process/ equipment manuals so that the final process SB8. selected is correct SB9. organize information, tools, manuals etc. on the shop floor so that sorting becomes easy SB10. reorganize resources on the line/ shift in case of change of plans
	Judgment and Critical Thinking
	The user/individual on the job needs to know and understand how to: SB11. use common sense and make judgments during day to day basis SB12. use reasoning skills to identify and resolve problems SB13. use intuition to detect any potential problems which could arise during operations
	Ownership
	The user/individual on the job needs to know and understand how to: SB14. accept additional responsibility for self and the team SB15. encourage self and other to take greater responsibilities SB16. ensure that the work allocated to the team is completed as per timelines and quality norms SB17. identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
	Quality Consciousness

	The user/individual on the job needs to know and understand how to: SB18. identify defective parts in the manufacturing line by comparing SB19. manufactured pieces with the work standard SB20. link the defect observed with the overall impact on the performance of the component/ automobile SB21. support and contribute in monitoring and delivering high quality output from self and others SB22. train team members on maintaining quality standards set by the organization
	Decision making
	The user/individual on the job needs to know and understand how to: SB1. use previous experience in resolving problems and taking decisions SB2. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
	Out of Box thinking
	The user/ individual on the job needs to know and understand how to: SB3. Familiarise with leading practices available in the market SB4. Think independently on new approaches to manufacturing process, material management, data management and team management SB5. Represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team



NOS Version Control

NOS Code	ASC/N3511		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	20/12/2013
Industry Sub-sector	Manufacturing	Last reviewed on	25/12/2013
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15



ASC/N0016 **Understand process requirements, ensure implementation and suggest process improvements**

National Occupational Standard

Overview

This unit is about the understanding all the required processes, creating first level process documents, training operators on the process, ensuring process implementation and providing basic inputs for improvement

ASC/N0016 **Understand process requirements, ensure implementation and suggest process improvements**

National Occupational Standard

Unit Code	ASC /N0016
Unit Title (Task)	**Understand process requirements, ensure implementation and suggest process improvements**
Description	This NOS is about understanding for the required processes, ensuring implementation of processes as per the Work instruction/ SOPs/ Control Plan and also providing basic level of inputs for process improvement through deploying different tools/ participating in analysis
Scope	The machine setter will be responsible for: • Understanding all requisite processes in detail and ensuring implementation • Process Improvement • Implementation of various initiatives The role is responsible for interacting with manufacturing lines, materials management, maintenance team, quality control & quality assurance, process engineering and safety teams
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Understanding all the requisite processes in detail and ensuring implementation	PC1. Display detailed understanding of all the requisite processes to be adopted for completing the work order through reading the process manuals/ Work Instructions/Standard Operating Procedures for the production job PC2. Ensure first level drafting of process manuals, Work Instructions, Control Plans, process flow charts to enable the team to easily understand and implement the process PC3. Ensure proper display of Work Instructions, Control Plans and flow charts at the correct places on the shop floor to enable timely and proper view of the documents PC4. Share knowledge of processes , inputs and outputs with the operators and in order to enhance their skill levels PC5. Maintain work flow by monitoring steps of the processes, setting variables, observing control points and equipment PC6. Monitor various process parameters on a regular basis and ensure compliance to agreed standards (e.g. ambient air quality, stack monitoring, water quality monitoring etc.) PC7. Ensuring recording and reporting procedures and systems are in place PC8. Facilitating corrections to malfunctions within process control points PC9. Ensure that all the tools and measuring instruments used on the shop floor are inspected, tested and calibrated internally/ externally as per the schedule PC10. Support the Shop Head/ Process Head in arranging for the requisite usage certificates for the tools and equipment as per the internal guidelines of the organization PC11. Ensure 5S implementation in the production line by analysing possible areas of systems and process improvements and ensure

	implementation of the recommended measures to address the gaps PC12. Ensure successful implementation of the completed Poka Yoke and kaizen on the running line PC13. Support the Shop Head/ Process manager in conducting first level audit of the manufacturing process on the shop floor
Process Improvement	PC14. Ensure optimum resource utilization and wastage reduction through process improvements, Kaizens, TQM, Poka Yoke etc. in the shift PC15. Provide inputs for analysis of breakdown trends and current maintenance process to identify areas for improvement to achieve cost savings and reduce breakdown timing PC16. Identify areas of improvement in the existing processes/systems and take measures to adhere to the identified Kaizen/ process improvement initiatives PC17. Ensure inputs from the line operators are considered while designing for various Poka Yoke , kaizen initiatives PC18. Encourage team members/ Supervisor/ operators to suggest quality improvement measures through suggestion schemes, evaluate feasibility of the ideas and discuss their implementation with seniors PC19. Support in analysing internal & external rejection data, planning and ensuring implementation of the corrective measures PC20. Ensure team has understanding of basic analytical tools like Why analysis, 7 QC tools, TQM principles to analyse various problems and design process improvement activities PC21. Support the Process Engineering/ Industrial Engineering team in modifications of the process flow, process/ plant layout to improve the process TAT, operational ergonomics, work quality etc.
Implementation of various initiatives	PC22.Take overall responsibility to ensure adherence to Safety standards by all employees and establish zero accident practice in the section PC23.Implement various business excellence techniques like Kaizen, 5S initiatives, etc. to enhance productivity for the plant/ shift
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant manufacturing standards and procedures followed in the company in detail KA2. different types of products manufactured by the company KA3. knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution KA4. quality norms and standards prescribed in the Quality Manual by the organization for painting KA5. 5S and Safety norms practiced in the organization

ASC/N0016 **Understand process requirements, ensure implementation and suggest process improvements**

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. different types of manufacturing processes used KB2. requirement of raw materials used in the process KB3. about tools, jigs and fixtures , their usage and maintenance methods KB4. how to operate the machine in both, automatic and manual mode KB5. basic understanding of robotics, CNC operations, data acquisitions systems, automatic recording instruments KB6. using engineering drawings, sketches, control plan and work instructions in the plant KB7. usage of various measurement tools like Vernier Calipers, Micrometres, rulers, scales, weighing machines etc. KB8. basic arithmetic and calculation methods KB9. how to handle electrical equipment and circuits, rectifiers and control panel etc. KB10. different types of defects which may arise due to improper manufacturing and the impact of the defect on product performance KB11. metallurgical and chemical properties of material involved KB12. how to measure the correct specifications of the output in the terms of thickness, hardness, durability, tightness, finesse etc. KB13. various problems solving tools like 7QC, Why Analysis, Brain storming etc. KB14. key areas of power consumption/ steam consumption, compressed air consumption etc. KB15. various data entry tools and formats used in the organization KB16. ability to visualize the final product output and hence decide on the key steps and parameters to be followed KB17. usage of various business correspondence tools like Email, MS Office tools (Word, Excel, Power Point) etc. KB18. about the various hazards related to various chemicals if used in the processes, the hazards involved in the process operations and usage of PPEs
Skills (s) [optional]	
A. Core Skills/ Generic Skills	**Writing and reading skills**
	The user/ individual on the job needs to know and understand how to: SA1. create first level process manuals, Control Plans, Work Instructions in an manner that the operators can easily understand the process requirements and process steps SA2. create small notes/ work documents/ diagrams for supervisors ,operators and helpers to help them understand the process SA3. use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/suppliers etc. SA4. read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better

ASC/N0016 **Understand process requirements, ensure implementation and suggest process improvements**

	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA5. discuss task lists, schedules, and work-loads with the operative team members SA6. effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements SA7. answer the queries raised by the operative team as well as intercompany departments SA8. effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc. SA9. attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
B. Professional Skills	**Team Leadership**
	The user/individual on the job needs to know and understand how to: SB1. communicate effectively to the team members SB2. identify conflicts in the team and try to resolve them at the earliest SB3. interact and engage with the team members on a day to day basis SB4. counsel and coach the operators and help them resolve issues SB5. timely highlight to the management about any good work/ achievement by the operators and helpers SB6. Train team members on the process, safety, quality and other behavioural aspects
	Analytical Thinking& Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. identify problems occurring on the shop floor SB8. break the problem into smaller issues and tasks to arrive at a solution SB9. understand inter process relationship and establish relationship between various parts of the problem SB10. leverage experience and technical expertise to find effective solutions to problems SB11. use basic analytical tools to arrive at solutions SB12. collaborate with cross functional teams to resolve problems
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB13. plan, organize and prioritize the work order and jobs received from the production manager SB14. manage the schedule plan for the operators and helpers on the line/shift SB15. Periodically review all process/ equipment manuals so that the final process selected is correct SB16. organize information, tools, manuals etc. on the shop floor so that sorting becomes easy SB17. reorganize resources on the line/ shift in case of change of plans

	Judgment and Critical Thinking
	The user/individual on the job needs to know and understand how to: SB18. use common sense and make judgments during day to day basis SB19. use reasoning skills to identify and resolve problems SB20. use intuition to detect any potential problems which could arise during operations SB21. critically analyse solutions/ recommendations shared by operatives and supervisors for implementation
	Ownership
	The user/individual on the job needs to know and understand how to: SB22. accept additional responsibility for self and the team SB23. encourage self and other to take greater responsibilities SB24. ensure that the work allocated to the team is completed as per timelines and quality norms SB25. identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
	Team Work
	The user/individual on the job needs to know and understand how to: SB26. motivate and provide support for the team on the shop floor SB27. encourage collaboration between team members SB28. resolve team issues and grievances to manage conflicts within the team SB29. create an environment of approachability, trust and openness within the team SB30. ensure role clarity for all operators and helpers on the line/ shift SB31. escalate any team related issues to the concerned person at the right time
	Quality Consciousness
	The user/individual on the job needs to know and understand how to: SB32. identify defective parts in the manufacturing line by comparing manufactured pieces with the work standard SB33. link the defect observed with the overall impact on the performance of the component/ automobile SB34. support and contribute in monitoring and delivering high quality output from self and others SB35. train team members on maintaining quality standards set by the organization
	Decision making
	The user/individual on the job needs to know and understand how to: SB36. use previous experience in resolving problems and taking decisions SB37. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
	Out of Box thinking

	The user/ individual on the job needs to know and understand how to: SB38. Familiarise with leading practices available in the market SB39. Think independently on new approaches to manufacturing process, material management, data management and team management SB40. Represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

NOS Version Control

NOS Code	ASC/N0016		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	20/12/2013
Industry Sub-sector	Manufacturing	Last reviewed on	25/12/2013
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15

ASC/N0017 **Manage and analyze production related operations of the shift/ line on a day to day basis**

National Occupational Standard

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Overview

This unit is about the ensuring the effective, efficient and safe production output in a shift/ process shop

ASC/N0017 **Manage and analyze production related operations of the shift/ line on a day to day basis**

National Occupational Standard

Unit Code	ASC /N0017
Unit Title (Task)	**Manage and analyze production related operations of the shift/ line on a day to day basis**
Description	This NOS is about ensuring Operational Productivity
Scope	The role will be responsible for • managing operations in the shift/ Process • manpower and material management in the shift/ process • ensure conformance to quality parameters and norms • analyse data on production, maintenance, quality, manpower deployment etc. The job holder will cover all types of manufacturing processes in the automobile industry. The role holder will interact with the different manufacturing process teams, maintenance team, material management team, industrial engineering team, Quality Control & Assurance team, Safety team and HR/IR team
Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Manpower Management	PC1. Undertake effective shift planning based on manpower allocation and shift handling of place right manpower on the right workstation in coordination with Production In-charge to achieve production targets PC2. Support the Shop Head/ Process Head in finalizing the shift rosters for the week and month based on the production plan available
Material Management	PC3. Send inventory requirements to Stores and Purchase department and follow up with stores and purchase to ensure timely receipt of material (Spares, Consumables) PC4. Ensure that the incoming raw material quality is inspected and meets the production requirement PC5. Ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ Work Plans so that production targets are met for the line/ shift
Supervise Production Operations	PC6. Ensure that the production plan shared by the PPC team is fulfilled during the shift/ across lines PC7. Coordinate with various functions like material management, stores, paint shop, assembly line, quality, safety, production planning etc. to ensure communication of required information and resolution of queries PC8. Responsible for End of Line Inspection under supervision PC9. Ensure that the operators and helpers have the required tools and equipment at the start of the process PC10. Identify & implement action steps to reduce losses and wastages during shift operation and ensure minimum rejection of components PC11. Observe and note the consumption of energy, fuel, steam on the production line and utilize these inputs for optimization of various factors of production PC12. Support the maintenance team in finalizing the preventive maintenance schedule for the shop

ASC/N0017 **Manage and analyze production related operations of the shift/ line on a day to day basis**

	PC13. Ensure that the operator and helper are using the required Personal Protective Equipment like Goggles, masks, gloves and other PPE's at the time of conducting the painting operation
Conformance to Product and Process Quality	PC14. Conduct random incoming quality inspection of material and provide the relevant feedback on the same to the store PC15. Conduct quality inspection of the process parameters, lab parameters and WIP products and provide necessary feedback to the line leaders PC16. Conduct quality inspection of the first sample/batch to ensure that the quality of the product produced meet customer requirements PC17. Conduct inspection and analysis of the defects observed in the process and products
Data Collation and Analysis	PC18. Prepare daily and monthly production MIS reports to match actual performance vis-à-vis the targets and report the same to Production In-chart PC19. Verify the production and material movement related data entries in the system (manual/ ERP) for the shift and ensure correctness of the data PC20. Ensure compilation of data of breakdown maintenance and reporting the same to the maintenance team PC21. Collaborate with the maintenance team in conducting detailed breakdown analysis to understand problems, look out for process/ machine modifications and resolve the issues PC22. Conduct random sampling of the process parameters, finished goods and WIP products and provide necessary feedback to the line leaders PC23. Collaborate with the Quality Management and Inspection team in conducting detailed analysis to resolve issues PC24. Collaborate with various supervisors to capture process data points as mentioned in the internal operating guidelines for data analytics PC25. Support the Shop Head/ Process Head in analysing the various data points related to production, maintenance, manpower deployment, material management, costs etc. PC26. Support the Shop Head/ Process Head in creating various analytical presentations required for process/ shop/ plant review
Knowledge and Understanding (K)	
B. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant manufacturing standards and procedures followed in the company in detail KA2. different types of products manufactured by the company KA3. knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution KA4. quality norms and standards prescribed in the Quality Manual by the organization for painting KA5. 5S and Safety norms practiced in the organization

ASC/N0017 **Manage and analyze production related operations of the shift/ line on a day to day basis**

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. different types of manufacturing processes KB2. requirement of raw materials used in the process KB3. about tools, jigs and fixtures , their usage and maintenance KB4. how to operate both in automatic and manual mode KB5. basic understanding of robotics, CNC operations, data acquisitions systems, automatic recording instruments KB6. different types of defects which may arise due to improper manufacturing KB7. basic Arithmetic and calculation methods KB8. ability to visualize the final product output and hence decide on the key steps to be followed KB9. about handling of electrical equipment and circuits, rectifiers and control panel etc. KB10. metallurgical and chemical properties of the material under usage KB11. how to measure the correct specifications of the output in the terms of thickness, hardness, durability, tightness etc KB12. how to visualize the final product output and hence decide on the parameters of temperature, pressure, current and voltage KB13. various problems solving tools like 7QC, Why Analysis, Brain storming KB14. usage of various business correspondence tools like Email, MS Office tools (Word, Excel, Power Point) etc. KB15. about the various hazards related to various chemicals if used in the processes, the hazards involved in the process operations and usage of PPEs
Skills (s) [optional]	
A. Core Skills/ Generic Skills	**Writing and reading skills**
	The user/ individual on the job needs to know and understand how to: SA1. create first level process manuals, Control Plans, Work Instructions in an manner that the operators can easily understand the process requirements and process steps SA2. create small notes/ work documents/ diagrams for supervisors ,operators and helpers to help them understand the process SA3. use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc. SA4. read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA5. discuss task lists, schedules, and work-loads with the operative team members SA6. effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements

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	SA7. answer the queries raised by the operative team as well as intercompany departments SA8. effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc. SA9. attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
B. Professional Skills	**Team Leadership**
	The user/individual on the job needs to know and understand: SB1. communicate effectively to the team members SB2. identify conflicts in the team and try to resolve them at the earliest SB3. interact and engage with the team members on a day to day basis SB4. counsel and coach the operators and help them resolve issues SB5. timely highlight to the management about any good work/ achievement by the operators and helpers
	Analytical Thinking and Problem Solving
	The user/individual on the job needs to know and understand how to: SB6. identify problems occurring on the shop floor SB7. break the problem into smaller issues and tasks to arrive at a solution SB8. understand inter process relationship and establish relationship between various parts of the problem SB9. leverage experience **and technical expertise** to find effective solutions to problems SB10. use basic analytical tools to arrive at solutions SB11. collaborate with cross functional teams to resolve problems
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB12. plan, organize and prioritize the work order and jobs received from the production manager SB13. manage the schedule plan for the operators and helpers on the line/shift SB14. validate all process/ equipment manuals so that the final process selected is correct SB15. organize information, tools, manuals etc. on the shop floor so that sorting becomes easy SB16. reorganize resources on the line/ shift in case of change of plans
	Judgment and Critical Thinking
	The user/individual on the job needs to know and understand how to: SB17. use common sense and make judgments during day to day basis SB18. use reasoning skills to identify and resolve problems SB19. use intuition to detect any potential problems which could arise during operations SB20. critically analyse solutions/ recommendations shared by operatives and supervisors for implementation

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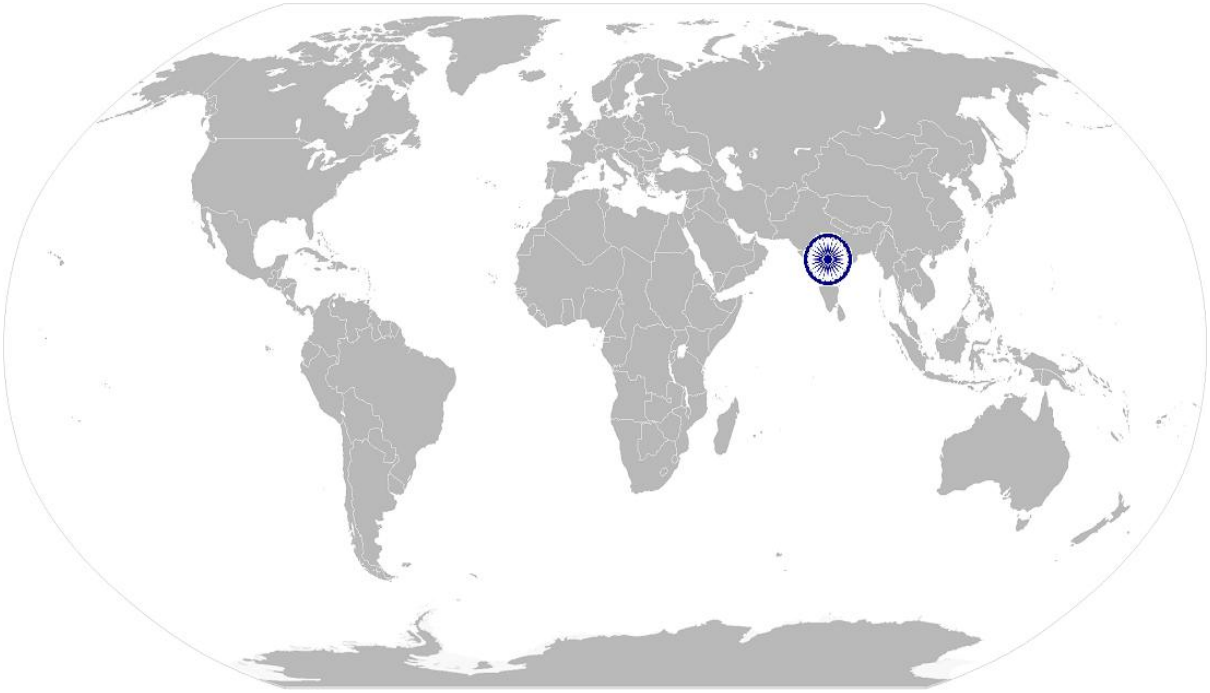
	Ownership
	The user/individual on the job needs to know and understand how to: SB21. accept additional responsibility for self and the team SB22. encourage self and other to take greater responsibilities SB23. ensure that the work allocated to the team is completed as per timelines and quality norms SB24. identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
	Team Work
	The user/individual on the job needs to know and understand how to: SB25. motivate and provide support for the team on the shop floor SB26. encourage collaboration between team members SB27. resolve team issues and grievances to manage conflicts within the team SB28. create an environment of approachability, trust and openness within the team SB29. ensure role clarity for all operators and helpers on the line/ shift SB30. escalate any team related issues to the concerned person at the right time
	Quality Consciousness
	The user/individual on the job needs to know and understand how to: SB31. identify defective parts in the manufacturing line by comparing SB32. manufactured pieces with the work standard SB33. link the defect observed with the overall impact on the performance of the component/ automobile SB34. support and contribute in monitoring and delivering high quality output from self and others SB35. train team members on maintaining quality standards set by the organization
	Decision making
	The user/individual on the job needs to know and understand how to: SB36. use previous experience in resolving problems and taking decisions SB37. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
	Out of Box thinking
	The user/ individual on the job needs to know and understand how to: SB38. Familiarise with leading practices available in the market SB39. Think independently on new approaches to manufacturing process, material management, data management and team management SB40. Represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

ASC/N0017 **Manage and analyze production related operations of the shift/ line on a day to day basis**

NOS Version Control

NOS Code	ASC/N0017		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	20/12/2013
Industry Sub-sector	Manufacturing	Last reviewed on	25/12/2013
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15

National Occupational Standard



Overview

This unit is about effective management of the team of operators and helpers for day to day operations in the line/shift

ASC/N0018 **Finalize and manage the team on the line/ shift on a day to day basis**

National Occupational Standard

Unit Code	ASC /N0018
Unit Title (Task)	**Finalize and manage the team on the line/ shift on a day to day basis**
Description	This NOS is about managing the team of operatives and helpers on day to day basis, ensuring their shift deployment, motivating them by involving them in various engagement initiatives at the shop floor, helping them improve the skills levels and managing their grievances in the best possible manner in order to maximize the people productivity at the shop floor
Scope	The role will be responsible for • engaging the workforce through employee engagement and communication • finalizing manpower deployment • measuring operator performance, sharing feedback and training of helpers and operators • managing grievances of the team members The job holder will cover all types of manufacturing processes in the automobile industry. The role holder will interact with the different manufacturing process teams, maintenance team, material management team, industrial engineering team, Quality Control & Assurance team, Safety team and HR/IR team

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Engaging the shop floor work force through employee communication and employee engagement	PC1. Ensure operators and helpers on the production line/ shift are aware of the job expectations on a daily basis PC2. Ensure that the operators are aware of the production targets and the timelines required to process a work order as finalized in the production plan PC3. Involve operators and helpers for the daily floor meeting/ morning meetings/ staff meetings to communicate information intended for them PC4. Ensure communication to line operators/ helpers on any changes in policies/ processes by the organization through required verbal/ written mechanisms PC5. Ensure participation of employees in various engagement initiatives organized at the plant and other place by the organization PC6. Involve operators and helpers in Quality Circles, TQM & Kaizen meets, Brainstorming sessions, safety drills etc. to increase their involvement in manufacturing operations PC7. Ensure availability of tea, snacks, drinking water and basic hygiene facilities at the shop floor for the operative workforce PC8. Escalate issues to concerned staff in case of any issue related to operative deployment and engagement

ASC/N0018 **Finalize and manage the team on the line/ shift on a day to day basis**

Finalizing manpower deployment	PC9. Finalize along with the process manager, the shift planning and manpower deployment for the shift/ line as per the proposed production plan PC10. Support the process manager in creating week wise shift rosters for the shift/ line manpower and ensure rotation of manpower as per the organizational norms and guidelines PC11. Maintain the information on leaves/ IN Out time keeping and shift/ line overtime for the operatives and helpers and share the information with the concerned as and when required PC12. Identify skilled manpower for the process and ensure periodic updating of Skill Matrix/ Skill Chart for the shift/ line/ process area PC13. Ensure identification and deployment of right skilled people at the right places on the line/ process area
Employee Performance Measurement and Employee Development	PC14. Ensure that all the operative manpower is aware of the production targets, production plan and daily productivity targets PC15. Track the daily performance of the operators and helpers during the shift and note the achievement levels in a manual register/ online IT enabled system PC16. Provide feedback to the operators and helper in case of any process deviation observed PC17. Provide feedback to managers pertaining to performance appraisals of operators and helpers PC18. Ensure that the operatives are trained and are aware of the processes which need to be followed on the shop floor during the production process PC19. Support the manager and the training team in training of entry level operators and helpers in the plant PC20. Share knowledge of processes , inputs and outputs with the operators to enhance their skill levels PC21. Other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers PC22. Drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts
Grievance Management for Operators and Helpers	PC23. In case the operating staff has any queries, ensure that the queries are resolved either by self or escalated to the concerned person PC24. Listen to issues related to workmen problems/ work men grievances/ Complaints/ Personal Problems etc. for the operators and helpers PC25. Resolve issues which are under the purview of the supervisor and escalate the ones which need higher intervention to the concerned team PC26. Counsel employees for any work related issues or any personal problems highlighted by the employee
Knowledge and Understanding (K)	
C. Organizational Context (Knowledge of	The user/individual on the job needs to know and understand: KA1. relevant HR Policies and Processes followed by the organization

the company / organization and its processes)	KA2. different types of products manufactured by the company KA3. knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution KA4. 5S and Safety norms practiced in the organization
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. different types of manufacturing processes KB2. various grievance management tools available in the organization KB3. various problems solving tools like 7QC, Why Analysis, Brain storming KB4. different types of communication channels practiced by the organization KB5. the method of noting observations, maintaining records and sharing them with the concerned in the required format KB6. knowledge of shift roster norms and guidelines KB7. how and when to measure performance of the operators KB8. how to share feedback with team members
Skills (s) [optional]	
A. Core Skills/ Generic Skills	**Writing and reading skills**
	The user/ individual on the job needs to know and understand how to: SA1. create first level process manuals, Control Plans, Work Instructions in an manner that the operators can easily understand the process requirements and process steps SA2. create small notes/ work documents/ diagrams for supervisors ,operators and helpers to help them understand the process SA3. use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc. SA4. read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA5. discuss task lists, schedules, and work-loads with the operative team members SA6. effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements SA7. answer the queries raised by the operative team as well as intercompany departments SA8. effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc. SA9. attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
B. Professional Skills	**Team Leadership**

ASC/N0018 **Finalize and manage the team on the line/ shift on a day to day basis**

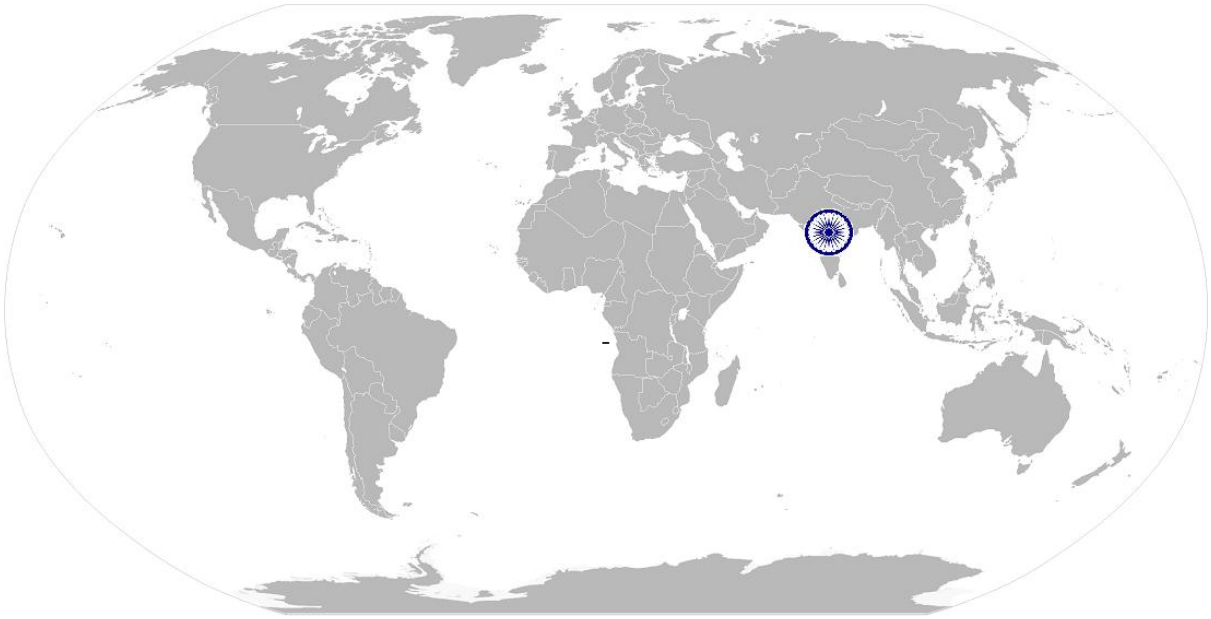
	The user/individual on the job needs to know and understand how to: SB1. communicate effectively to the team members SB2. identify conflicts in the team and try to resolve them at the earliest SB3. interact and engage with the team members on a day to day basis SB4. counsel and coach the operators and help them resolve issues SB5. timely highlight to the management about any good work/ achievement by the operators and helpers
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB6. break the problem into smaller issues and tasks to arrive at a solution SB7. understand inter process relationship and establish relationship between various parts of the problem SB8. leverage experience to find effective solutions to problems SB9. use basic analytical tools to arrive at solutions
	Judgment and Critical Thinking
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve problems SB12. use intuition to detect any potential problems which could arise during operations
	Ownership
	The user/individual on the job needs to know and understand how to: SB13. accept additional responsibility for self and the team SB14. encourage self and other to take greater responsibilities SB15. ensure that the work allocated to the team is completed as per timelines and quality norms SB16. identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
	Team Work
	The user/individual on the job needs to know and understand how to: SB17. motivate and provide support for the team on the shop floor SB18. encourage collaboration between team members SB19. resolve team issues and grievances to manage conflicts within the team SB20. create an environment of approachability, trust and openness within the team SB21. ensure role clarity for all operators and helpers on the line/ shift SB22. escalate any team related issues to the concerned person at the right time
	Decision making
	The user/individual on the job needs to know and understand how to: SB23. use previous experience in resolving problems and taking decisions SB24. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

ASC/N0018 **Finalize and manage the team on the line/ shift on a day to day basis**

NOS Version Control

NOS Code	ASC/N0018		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	20/12/2013
Industry Sub-sector	Manufacturing	Last reviewed on	25/12/2013
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15

National Occupational Standard



Overview

This unit is about maintaining a Safe and Healthy working environment

National Occupational Standard

Unit Code	ASC/N0006
Unit Title (Task)	**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
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Identify and report the risks identified	PC1. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise PC2. Identify areas in the plant which are potentially hazardous/ unhygienic in nature PC3. Conduct regular checks on machine health to identify potential hazards due to wear and tear of machine PC4. Ensure that all equipment are tested of safety conformance as per the cycle/ timelines identified in the organization PC5. Inform the shop head and the safety team about the potential risks identified in the processes, workplace area/ layout, material used, malfunctioning of safety related equipment etc. PC6. Inform the maintenance team about machine breakdowns, damages which can potentially harm man/ machine during operations and analyse their defects to prevent any future damage to men/ machine PC7. Ensure that all risk involving and hazardous areas near the work place are marked/ tagged in order to caution the users of the work area/ machinery PC8. Create awareness amongst other by sharing information on the identified risks. Ensure that periodic awareness sessions are conducted for the helpers and operatives to make them aware of the risks identified
Create and sustain a Safe, clean and environment friendly work place	PC9. Support the Safety team in risk identification and creation of a risk mitigation plan PC10. Train team members on safety and health related issues PC11. Ensure that all team members operate the machine using the recommended Personal Protective Equipment (PPE) and also ensure self-usage of the required PPEs

	PC12. Ensure that all operatives follow the instructions given on the equipment manual describing the operating process of the equipment to prevent any hazard PC13. Ensure that all team members follow the Safety, Health and Environment related practices developed by the organization PC14. Ensure that a clean and safe working environment near the work place is maintained and that there is no spillage of chemicals, production waste, oil, solvents etc. in the working area PC15. Ensure that the first aid safety kit at the work place/ shop floor contains the requisite items to respond to minor injuries. Also may sure that the operatives and helpers are made aware of these items and their usage PC16. Ensure that a documented record of all minor and major injuries is kept and updated on the shop floor PC17. Ensure that the waste disposal is done in the designated area and manner as per organization SOP PC18. Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques and ensure that the team participate in all the required safety and fire drills PC19. Participate in all safety related initiatives like Safety Committee participations, Safety Day Celebrations etc. PC20. Maintain high standards of personal hygiene at the work place PC21. Ensure that any activity performed by the team members which may negatively impact their health and productivity is immediately brought to notice by the supervisor PC22. Periodically counsel and train employees on good health and safe working practices. PC23. Inform the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive actions can be planned for others
Knowledge and Understanding (K)w.r.t. the scope	
Element	**Knowledge and Understanding**
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. relevant standards, procedures and policies related to Health, Safety and Environment followed in the company KA2. emergency handling procedures & hierarchy for escalation
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basic knowledge of Safety procedures(fire fighting, first aid) within the organization KB2. knowledge of various types of PPEs and their usage KB3. basic knowledge of risks/hazards associated with each occupation in the organization KB4. how to safely operate various tools and machines and risks associated with the tools/ equipment

	KB5. knowledge of personal hygiene and how an individual an contribute towards creating a highly safe and clean working environment
Skills (S)w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA1. write basic level notes and observations SA2. note down observations (if any) related to the process SA3. write information documents to internal departments/ internal teams
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA4. read safety instructions put up across the plant premises SA5. read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. effectively communicate information to team members SA7. Informemployees in the plant and concerned functions about events, incidents & potential risks observed related to Safety, Health and Environment. SA8. question the process head/ safety team in order to understand the safety related issues SA9. attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs
B. Professional Skills	**Judgmental Thinking**
	The user/individual on the job needs to know and understand how to: SB1. use common sense and make judgments during day to day basis SB2. use reasoning skills to identify and resolve basic problems
	Persuasion skills
	The user/ individual on the jobs needs to know and understand how to: SB3. persuade team members to wear Personal Protective Equipment as per requirement SB4. ensure that the team understands the importance of using various machines and equipment without creating any risk to human/ machine SB5. train team members on various risks identified
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB6. break the problem into smaller issues and tasks to arrive at a solution SB7. understand inter process relationship and establish relationship

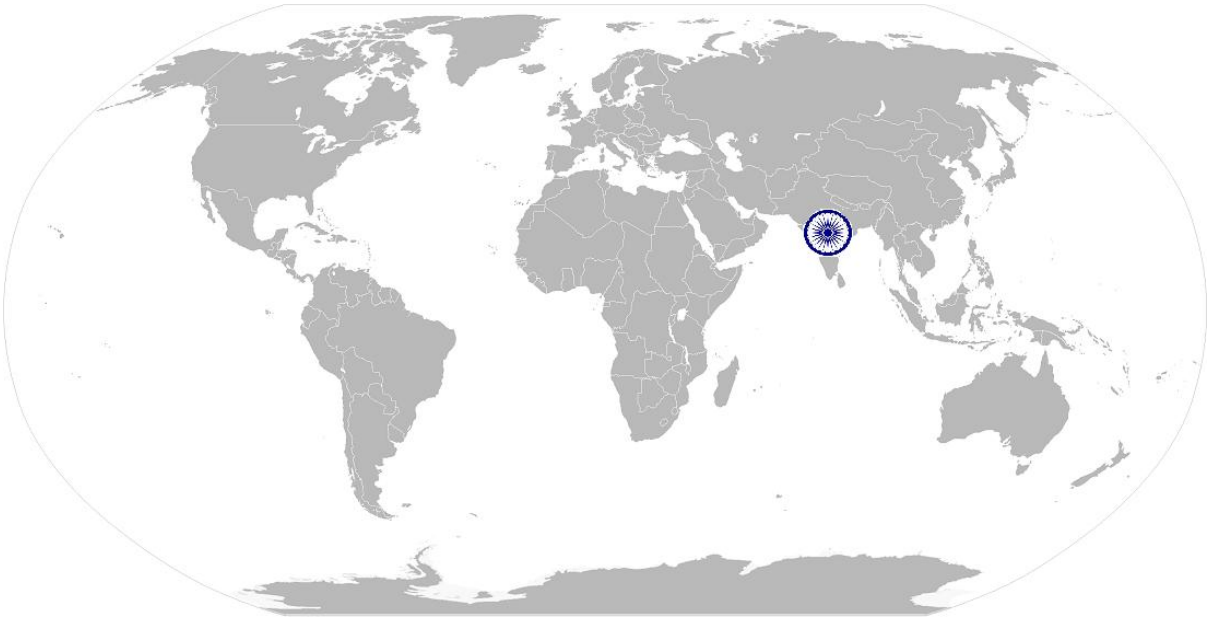
	between various parts of the problem SB8. leverage experience to find effective solutions to problems SB9. use basic analytical tools to arrive at solutions

NOS Version Control

NOS Code	ASC/N0006		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	20/12/2013
Industry Sub-sector	Manufacturing	Last reviewed on	25/12/2013
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15

ASC/N0022 **Ensure implementation of 5S activities at the shop floor and the office area**

National Occupational Standard



Overview

This unit is about the implementing the various principles of 5S and ensure that the given guidelines are followed to ensure a clean and efficient working environment in the organization

ASC/N0022 **Ensure implementation of 5S activities at the shop floor and the office area**

National Occupational Standard

Unit Code	ASC/N0022
Unit Title (Task)	**Ensure implementation of 5S activities at the shop floor & the office area**
Description	This NOS is about overseeing the implementation of all 5 S activities both at the shop floor and the office area by the team members and training the team in implementation of the 5S principles
Scope	The individual needs to • Ensure sorting, streamlining/ organizing, storage and documentation, systematic cleaning, standardization and sustenanceacross the plant and office premises of the organization as given in the organization guidelines
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Ensure proper sorting of items at the work place	PC1. Ensure all recyclable materials are put in designated containers PC2. Ensure no Tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use PC3. Ensure that the operators and other team members are segregating the waste in hazardous/Non Hazardous waste as per the sorting work instructions PC4. Ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins PC5. Segregate the items which are labelled at red tag items for the process area and keep them in the correct places PC6. Ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions PC7. Check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area PC8. Oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material PC9. Ensure that areas of material storage areas are not overflowing PC10. Ensure proper stacking and storage of 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
Ensure proper documentation and storage – streamlining & organizing the workplace	PC11. Ensure that the team follows the given instructions and checks for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc. PC12. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions PC13. Ensure that organizing the workplace takes place with due

	considerations to the principles of wasted motions, ergonomics, work & method study .
Ensure cleaning of self and the work place	PC14. Ensure that the area has floors swept, machinery clean and is generally neat and tidy. In case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards PC15. Ensure workbenches and work surfaces are clean and in good condition PC16. Ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination PC17. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene
Ensure standardization	PC18. Ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant PC19. Oversee that various cleaning and organizing tasks have been developed and assigned for the work area PC20. Ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes PC21. Ensure timely creation and sharing of the 5S checklists PC22. Ensure that the 5S manual are available as per the timelines
Ensure sustenance	PC23. Ensure team cooperation during the audit of 5 S activities PC24. Ensure that workmen are periodically trained to address challenges related to 5S PC25. Participate actively in employee work groups on 5S and encourage team members for active participation PC26. Oversee that the staff/operators are trained and fully understand 5s procedures PC27. Ensure that all the guidelines for What to do and What not to do to build sustainability in 5S are mentioned in the 5S check lists/ work instructions and are easily searchable PC28. Ensure continuous training of the team members on 5S in order to increase their awareness and support implementation PC29. Ensure that all visual controls, notice boards, symbols etc. at the manufacturing place are created, working and are put up as per the requirement
Knowledge and Understanding (K) w.r.t. the scope	
Element	**Knowledge and Understanding**
C. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA3. relevant standards, procedures and policies related to 5S followed in the company

ASC/N0022 **Ensure implementation of 5S activities at the shop floor and the office area**

D. Technical Knowledge	The user/individual on the job needs to : KB6. have basic knowledge of 5S procedures KB7. know various types 5s practices followed in various areas KB8. understand the 5S checklists provided in the department/ team KB9. have skills to identify useful & non useful items KB10. have knowledge of labels , signs & colours used as indicators KB11. Have knowledge on how to sort and store various types of tools, equipment, material etc. KB12. know , how to identify various types of waste products KB13. understand the impact of waste/ dirt/ dust/unwanted substances on the process/ environment/ machinery/ human body KB14. have knowledge of best and environment protective ways of cleaning & waste disposal KB15. understand the importance of standardization in processes KB16. understand the importance of sustainability in 5S KB17. have knowledge of TQM process KB18. have knowledge of various materials and storage norms KB19. understand visual controls, symbols, graphs etc.
Skills (S)w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	**Writing Skills**
	The user/ individual on the job needs to know and understand how to: SA10. write basic level notes and observations SA11. note down observations (if any) related to the process SA12. write information documents to internal departments/ internal teams
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA13. read 5S instructions put up across the plant premises
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA14. effectively communicate information to team members inform employees in the plant and concerned functions about 5S SA15. question the process head in order to understand the 5S related issues SA16. attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
B. Professional Skills	**Judgmental Thinking**
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve basic problems using

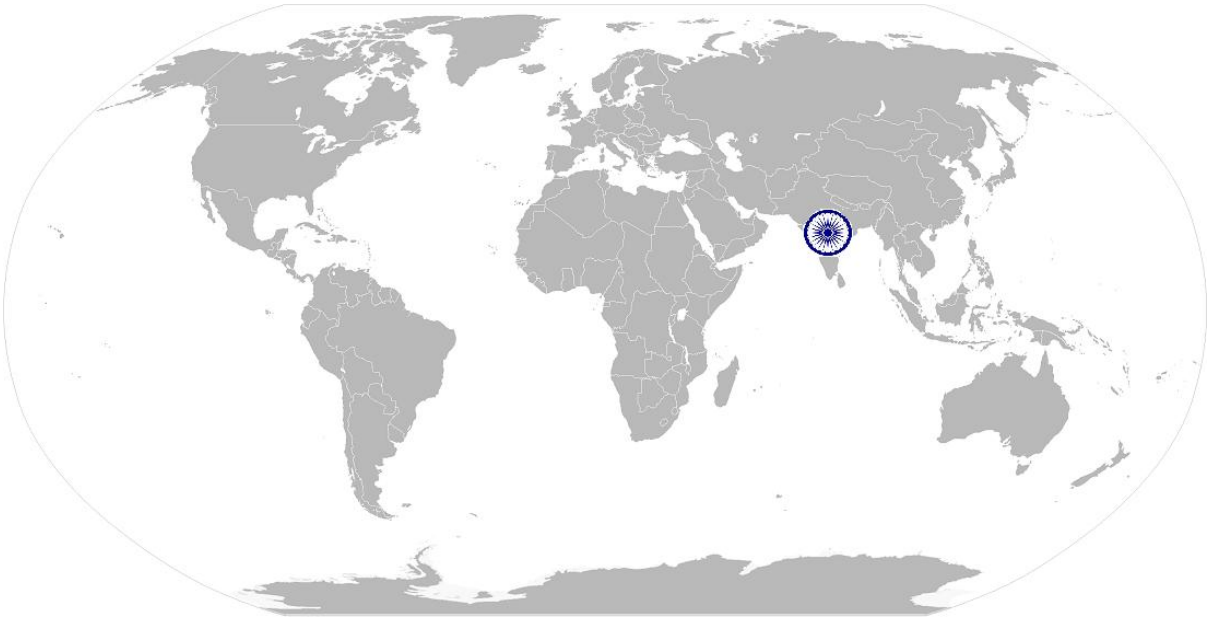
ASC/N0022 **Ensure implementation of 5S activities at the shop floor and the office area**

	5S
	Persuasion
	The user/ individual on the jobs needs to know and understand how to: SB12. persuade team members to follow 5 S SB13. ensure that the team members understand the importance of using 5 S tool
	Creativity
	The user/individual on the job needs to know and understand how to : SB14. use innovative skills to perform and manage 5 S activities at the work desk and the shop floor SB15. exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work emerge, techniques in CA/CI around 5 S work practices
	Self –Discipline
	The user/individual on the job needs to know and understand how to: SB16. do what is right, not what is a popular practice SB17. follow shop floor rules& regulations and avoid deviations SB18. lead by example in the plant premises while performing activities related to 5S SB19. ensure self-cleanliness on a daily basis SB20. demonstrate the will to keep the work area in a clean and orderly manner
	Ownership
	The user/individual on the job needs to know and understand how to: SB21. accept additional responsibility for self and the team SB22. encourage self and other to take greater responsibilities for managing 5S SB23. identify obstacles and bottlenecks in the process and find basic level solutions for removing these obstacles
	Decision making
	The user/individual on the job needs to know and understand how to: SB24. use previous experience in resolving problems and taking decisions SB25. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

ASC/N0022 **Ensure implementation of 5S activities at the shop floor and the office area**

NOS Version Control

NOS Code	ASC/N0022		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	1/03/2014
Industry Sub-sector	Manufacturing/ R&D	Last reviewed on	15/03/2014
Occupation	Machining	Next review date	Under revision expected date of revised version 31-Dec-15



Criteria for assessment of Trainees

JOB ROLE	Machine Setter / Master Technician
Qualification Pack	ASC/Q3506
No. Of NOS	1 Role specific ,5 generic

Assessable Outcomes	Assessment criteria	Marks Allocation		
		Theory	Viva	Practical
ASC/N3511:	**Ensure compliance towards different stages of machining operations, CNC Programming & Machine Setting**			
Ensure compliance towards all stages of machining operations	PC1. Ensure that the machining operator understands the task at hand PC2. Ensure that the team members understand and follow all the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors/ master technicians PC3. Ensure that the operator understands the machining and tooling requirements -fixtures, etc. and the type of coolants PC4. Observe the machine operations for any malfunctions to detect defects in the component manufactured inform the maintenance team of any malfunction observed to prevent damage to the machining equipment/output product PC5. Ensure recording operational data is being done such as pressure readings, length of strokes, feed rates, speed etc. in the formats specified PC6. Ensure tool replacement as per recommended tool life in no.		40	30

	of pieces and that the machine is maintained as per proper operational condition/daily maintenance check PC7. Perform minor repairs and adjustments to the machine and notify maintenance team when major service/repair is required . PC8. Ensure all de-burring processes are complete through the use of the correct tool to remove the extra burrs, sharp edges, rust and chips from the metal surface PC9. Ensure that the operator is using devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment for measuring specifications with valid calibration status PC10. Ensure that calibration points are sent to the in-house agencies/ external as applicable PC11. Ensure changing different worn machine accessories, such as cutting/ grinding/ broaching/hobbing tools (as per tool life listed, recommended) other hand tools PC12. Ensure removal of chips is completed by the operator from different machine areas and dispose of scrap or waste material into the disposal area in accordance with the company policies and environmental regulations PC13. Ensure changing different worn machine accessories, such as burnishing, lapping, buffing tools (as per tool life listed, recommended) other hand tools PC14. Verify the production and			

	material movement related data entries in the system (manual/ ERP) for the line/ shift and ensure correctness of the data PC15. Ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ Work Plans so that production targets are met for the line/ shift PC16. Ensure that suitable precautions are taken by the team while operating machining tools, EDM and wire cutting tool , various tools for cutting and grinding operations, assembly tools and lifting equipment etc.			
Ensure setting up of the CNC machine parameters	PC17. Analyse in detail the 3D CAD drawings and other engineering drawings, sketches, work orders, circuit diagrams etc. to determine the type of product output including Shape, Geometric Dimensions and Tolerance and Product Surface PC18. Determine the overall process and process parameters like tool type, tool speed, feed rate as required to execute the work order PC19. Define the sequence of operations of the various machine tools as determined in the overall process PC20. Determine reference points, Zero point, radial distance, angular distance, curvatures, path of movement of tools etc. by applying basic rules of geometry and trigonometry PC21. Ensure accurate calculation of hole distances, hole coordinates and dimensions as per the Work Orders/ SOPs		40	30

	PC22. Ensure geometrical configurations , alignments for fixture/ machine axes as given in the setting instructions. PC23. Load the program into the relevant machine and set the machine parameters based on the program settings PC24. Conduct trial tests or simulations to validate the results of the fed program on the machine operations and the overall product output PC25. Revise the program settings as per the test result and feed the revised program in the CNC operated machine PC26. Retest the machine observation and ensure conformance with the desired outcome as given in SOP, First piece Inspection etc.			
Ensure compliance to machine setting operations	PC27. Ensure correct calculation of machine operating parameters which will be entered in the machine controllers PC28. Using CNC programming techniques, machine controller programming techniques, ensure that the correct program is written and selected for machine operations PC29. Ensure that the programming covers all machine parameters like temperature, pressure, part movement, cycle time, required current & voltage, raw material feed rate, coolant flow, lubricant flow etc. as per the equipment operating guidelines PC30. Ensure that the program entered the machine is as per the loading criteria for the machine and that the machine is able to carry the operations at 100 % effectiveness		40	30

	PC31. Ensure conducting a test process after every change in the machine setting to ensure that the setting is in line with the final process outcomes			
	Sub Total	**90**	**120**	**90**
ASC/N0016:	**Understand process requirements, ensure implementation & suggest process improvements**	**Theory**	**Viva**	**Practical**
Understanding all the requisite processes in detail and ensuring implementation	PC1. Display detailed understanding of all the requisite processes to be adopted for completing the work order through reading the process manuals/ Work Instructions/Standard Operating Procedures for the production job PC2. Ensure first level drafting of process manuals, Work Instructions, Control Plans, process flow charts to enable the team to easily understand and implement the process PC3. Ensure proper display of Work Instructions, Control Plans and flow charts at the correct places on the shop floor to enable timely and proper view of the documents PC4. Share knowledge of processes , inputs and outputs with the operators and in order to enhance their skill levels PC5. Maintain work flow by monitoring steps of the processes, setting variables, observing control points and equipment PC6. Monitor various process parameters on a regular basis and ensure compliance to agreed standards (e.g. ambient air quality, stack monitoring, water quality monitoring etc.) PC7. Ensuring recording and reporting procedures and systems are in place PC8. Facilitating corrections to malfunctions within process control points		20	15

	PC9. Ensure that all the tools and measuring instruments used on the shop floor are inspected, tested and calibrated internally/ externally as per the schedule PC10. Support the Shop Head/ Process Head in arranging for the requisite usage certificates for the tools and equipment as per the internal guidelines of the organization PC11. Ensure 5S implementation in the production line by analysing possible areas of systems and process improvements and ensure implementation of the recommended measures to address the gaps PC12. Ensure successful implementation of the completed Poka Yoke and kaizen on the running line PC13. Support the Shop Head/ Process manager in conducting first level audit of the manufacturing process on the shop floor			
Process Improvement	PC14. Ensure optimum resource utilization and wastage reduction through process improvements, Kaizens, TQM, Poka Yoke etc. in the shift PC15. Provide inputs for analysis of breakdown trends and current maintenance process to identify areas for improvement to achieve cost savings and reduce breakdown timing PC16. Identify areas of improvement in the existing processes/systems and take measures to adhere to the identified Kaizen/ process improvement initiatives PC17. Ensure inputs from the line operators are considered while designing for various Poka Yoke , kaizen initiatives PC18. Encourage team members/ Supervisor/ operators to suggest quality improvement measures through suggestion schemes, evaluate feasibility of the ideas and discuss		20	15

	their implementation with seniors PC19. Support in analysing internal & external rejection data, planning and ensuring implementation of the corrective measures PC20. Ensure team has understanding of basic analytical tools like Why analysis, 7 QC tools, TQM principles to analyse various problems and design process improvement activities PC21. Support the Process Engineering/ Industrial Engineering team in modifications of the process flow, process/ plant layout to improve the process TAT, operational ergonomics, work quality etc.			
Implementation of various initiatives	PC22. Take overall responsibility to ensure adherence to Safety standards by all employees and establish zero accident practice in the section PC23. Implement various business excellence techniques like Kaizen, 5S initiatives, etc. to enhance productivity for the plant/ shift		20	15
	Sub Total	**45**	**60**	**45**
ASC/N0017:	**Manage and analyze production related operations of the shift/ line on a day to day basis**	**Theory**	**Viva**	**Practical**
Manpower Management	PC1. Undertake effective shift planning based on manpower allocation and shift handling of place right manpower on the right workstation in coordination with Production In-charge to achieve production targets PC2. Support the Shop Head/ Process head in finalizing the shift rosters for the week and month based on the production plan available		20	15
Material Management	PC3. Send inventory requirements to Stores and Purchase department and follow up with stores and purchase to ensure timely receipt of material (Spares, Consumables) PC4. Ensure that the incoming raw		20	15

	material quality is inspected and meets the production requirement PC5. Ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ Work Plans so that production targets are met for the line/ shift			
Supervise Production Operations	PC6. Ensure that the production plan shared by the PPC team is fulfilled during the shift/ across lines PC7. Coordinate with various functions like material management, stores, paint shop, assembly line, quality, safety, production planning etc. to ensure communication of required information and resolution of queries PC8. Responsible for End of Line Inspection under supervision PC9. Ensure that the operators and helpers have the required tools and equipment at the start of the process PC10. Identify & implement action steps to reduce losses and wastages during shift operation and ensure minimum rejection of components PC11. Observe and note the consumption of energy, fuel, steam on the production line and utilize these inputs for optimization of various factors of production PC12. Support the maintenance team in finalizing the preventive maintenance schedule for the shop PC13. Ensure that the operator and helper are using the required Personal Protective Equipment like Goggles, masks, gloves and other PPE's at the time of conducting the painting operation		20	15

Conformance to Product and Process Quality	PC14. Conduct random incoming quality inspection of material and provide the relevant feedback on the same to the store PC15. Conduct quality inspection of the process parameters, lab parameters and WIP products and provide necessary feedback to the line leaders PC16. Conduct quality inspection of the first sample/batch to ensure that the quality of the product produced meet customer requirements PC17. Conduct inspection and analysis of the defects observed in the process and products		20	15
Data Collation and Analysis	PC18. Prepare daily and monthly production MIS reports to match actual performance vis-à-vis the targets and report the same to Production In-chart PC19. Verify the production and material movement related data entries in the system (manual/ ERP) for the shift and ensure correctness of the data PC20. Ensure compilation of data of breakdown maintenance and reporting the same to the maintenance team PC21. Collaborate with the maintenance team in conducting detailed breakdown analysis to understand problems, look out for process/ machine modifications and resolve the issues PC22. Conduct random sampling of the process parameters, finished goods and WIP products and provide necessary feedback to the line		20	15

	leaders PC23. Collaborate with the Quality Management and Inspection team in conducting detailed analysis to resolve issues PC24. Collaborate with various supervisors to capture process data points as mentioned in the internal operating guidelines for data analytics PC25. Support the Shop Head/ Process Head in analysing the various data points related to production, maintenance, manpower deployment, material management, costs etc. PC26. Support the Shop Head/ Process Head in creating various analytical presentations required for process/ shop/ plant review			
	Sub Total	**75**	**100**	**75**
ASC/N0018:	**Finalize and manage the team on the line/ shift on a day to day basis**	**Theory**	**Viva**	**Practical**
Engaging the shop floor work force through employee communication and employee engagement	PC1. Ensure operators and helpers on the production line/ shift are aware of the job expectations on a daily basis PC2. Ensure that the operators are aware of the production targets and the timelines required to process a work order as finalized in the production plan PC3. Involve operators and helpers for the daily floor meeting/ morning meetings/ staff meetings to communicate information intended for them PC4. Ensure communication to line operators/ helpers on any changes in policies/ processes by the organization through		15	15

	required verbal/ written mechanisms PC5. Ensure participation of employees in various engagement initiatives organized at the plant and other place by the organization PC6. Involve operators and helpers in Quality Circles, TQM & Kaizen meets, Brainstorming sessions, safety drills etc. to increase their involvement in manufacturing operations PC7. Ensure availability of tea, snacks, drinking water and basic hygiene facilities at the shop floor for the operative workforce PC8. Escalate issues to concerned staff in case of any issue related to operative deployment and engagement			
Engaging the shop floor work force through employee communication and employee engagement	PC9. Ensure operators and helpers on the production line/ shift are aware of the job expectations on a daily basis PC10. Ensure that the operators are aware of the production targets and the timelines required to process a work order as finalized in the production plan PC11. Involve operators and helpers for the daily floor meeting/ morning meetings/ staff meetings to communicate information intended for them PC12. Ensure communication to line operators/ helpers on any changes in policies/ processes by the organization through required verbal/ written mechanisms PC13. Ensure participation of employees in various engagement initiatives		15	10

	organized at the plant and other place by the organization PC14. Involve operators and helpers in Quality Circles, TQM & Kaizen meets, Brainstorming sessions, safety drills etc. to increase their involvement in manufacturing operations PC15. Ensure availability of tea, snacks, drinking water and basic hygiene facilities at the shop floor for the operative workforce PC16. Escalate issues to concerned staff in case of any issue related to operative deployment and engagement			
Employee Performance Measurement and Employee Development	PC17. Ensure that all the operative manpower is aware of the production targets, production plan and daily productivity targets PC18. Track the daily performance of the operators and helpers during the shift and note the achievement levels in a manual register/ online IT enabled system PC19. Provide feedback to the operators and helper in case of any process deviation observed PC20. Provide feedback to managers pertaining to performance appraisals of operators and helpers PC21. Ensure that the operatives are trained and are aware of the processes which need to be followed on the shop floor during the production process PC22. Support the manager and the training team in training of entry level operators and helpers in the plant PC23. Share knowledge of		15	10

	processes , inputs and outputs with the operators to enhance their skill levels PC24. Other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers PC25. Drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts			
Grievance Management for Operators and Helpers	PC26. In case the operating staff has any queries, ensure that the queries are resolved either by self or escalated to the concerned person PC27. Listen to issues related to workmen problems/ work men grievances/ Complaints/ Personal Problems etc. for the operators and helpers PC28. Resolve issues which are under the purview of the supervisor and escalate the ones which need higher intervention to the concerned team PC29. Counsel employees for any work related issues or any personal problems highlighted by the employee		15	10
	Sub Total	**45**	**60**	**45**
ASC/ N0006:	**Maintain a safe and healthy working environment**	**Theory**	**Viva**	**Practical**
Identify and report the risks identified	PC1. Identify activities which can cause potential injury sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise PC2. Identify areas in the plant which are potentially		20	15

	hazardous/unhygienic in nature PC3. Conduct regular checks on machine health to identify potential hazards due to wear and tear of machine PC4. Ensure that all equipment are tested of safety conformance as per the cycle/ timelines identified in the organization PC5. Inform the shop head and the safety team about the potential risks identified in the processes, workplace area/ layout, material used, malfunctioning of safety related equipment etc. PC6. Inform the maintenance team about machine breakdowns, damages which can potentially harm man/ machine during operations and analyse their defects to prevent any future damage to men/ machine PC7. Ensure that all risk involving and hazardous areas near the work place are marked/ tagged in order to caution the users of the work area/ machinery PC8. Create awareness amongst other by sharing information on the identified risks. Ensure that periodic awareness sessions are conducted for the helpers and operatives to make them aware of the risks identified			
Identify and report the risks identified	PC9. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise PC10. Identify areas in the plant		20	15

	which are potentially hazardous/ unhygienic in nature PC11. Conduct regular checks on machine health to identify potential hazards due to wear and tear of machine PC12. Ensure that all equipment are tested of safety conformance as per the cycle/ timelines identified in the organization PC13. Inform the shop head and the safety team about the potential risks identified in the processes, workplace area/ layout, material used, malfunctioning of safety related equipment etc. PC14. Inform the maintenance team about machine breakdowns, damages which can potentially harm man/ machine during operations and analyse their defects to prevent any future damage to men/ machine PC15. Ensure that all risk involving and hazardous areas near the work place are marked/ tagged in order to caution the users of the work area/ machinery PC16. Create awareness amongst other by sharing information on the identified risks. Ensure that periodic awareness sessions are conducted for the helpers and operatives to make them aware of the risks identified			
	Sub Total	**30**	**40**	**30**
ASC/N0022: **Ensure implementation of 5S activities at the shop floor & the office area**		**Theory**	**Viva**	**Practical**

Ensure proper sorting of items at the work place	PC1. Ensure all recyclable materials are put in designated containers PC2. Ensure no Tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use PC3. Ensure that the operators and other team members are segregating the waste in hazardous/ Non Hazardous waste as per the sorting work instructions PC4. Ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins PC5. Segregate the items which are labelled at red tag items for the process area and keep them in the correct places PC6. Ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions PC7. Check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area PC8. Oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material PC9. Ensure that areas of material storage areas are not overflowing PC10. Ensure proper stacking and storage of 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			

Ensure proper documentation and storage – streamlining & organizing the workplace	PC11. Ensure that the team follows the given instructions and checks for labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc. PC12. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions PC13. Ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .			
Ensure cleaning of self and the work place	PC14. Ensure that the area has floors swept, machinery clean and is generally neat and tidy. In case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards PC15. Ensure workbenches and work surfaces are clean and in good condition PC16. Ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination PC17. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene			
Ensure standardization	PC18. Ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant PC19. Oversee that various cleaning and organizing tasks have been developed and assigned for the work area PC20. Ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around			

	standardization of processes PC21. Ensure timely creation and sharing of the 5S checklists PC22. Ensure that the 5S manual are available as per the timelines			
Ensure sustenance	PC23. Ensure team cooperation during the audit of 5 S activities PC24. Ensure that workmen are periodically trained to address challenges related to 5S PC25. Participate actively in employee work groups on 5S and encourage team members for active participation PC26. Oversee that the staff/operators are trained and fully understand 5s procedures PC27. Ensure that all the guidelines for What to do and What not to do to build sustainability in 5S are mentioned in the 5S check lists/ work instructions and are easily searchable PC28. Ensure continuous training of the team members on 5S in order to increase their awareness and support implementation PC29. Ensure that all visual controls, notice boards, symbols etc. at the manufacturing place are created, working and are put up as per the requirement			
Ensure standardization	PC30. Ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant PC31. Oversee that various cleaning and organizing tasks have been developed and assigned for the work area PC32. Ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes		20	15

	PC33. Ensure timely creation and sharing of the 5S checklists PC34. Ensure that the 5S manual are available as per the timelines			
	Sub Total	**15**	**20**	**15**
	Total Marks	**300**	**400**	**300**