

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

NSDA Reference

To be added by NSDA

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Automotive Skills Development Council

Address: Sat Paul Mittal Building,1/6, Siri Institutional Area

Khelgaon Road, New Delhi-110049

Tel: 011 – 41868090

Name and contact details of individual dealing with the submission

Name: Mr. Sunil Chaturvedi

Position in the organisation: CEO

Address if different from above: Same as above

Tel number(s):+91-9810236256

E-mail address:skc@asdc.org.in

List of documents submitted in support of the Qualifications File

1. Career Map of Machining and Quality Technician- Annexure 1
2. QP ASC/Q3509- Annexure 2

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

SUMMARY

Qualification Title	Machining and Quality Technician
Qualification Code	ASC/Q3509
Nature and purpose of the qualification	This is a Qualification Pack (QP) containing National Occupational Standards for the job role – Machining and Quality Technician The main purpose of the qualification and the target learners is to get unemployed people into work and to upgrade the skills of people already in work.
Body/bodies which will award the qualification	Automotive Skills Development Council
Body which will accredit providers to offer courses leading to the qualification	Automotive Skills Development Council
Body/bodies which will carry out assessment of learners	
Occupation(s) to which the qualification gives access	Machining and Quality Technician
Licensing requirements	N/A
Level of the qualification in the NSQF	3
Anticipated volume of training/learning required to complete the qualification	475 hours
Entry requirements and/or recommendations	Minimum Educational Qualifications - 10 th Std Pass Experience- NIL if already certified to ASDC qualification : ASC/Q 3502 (Machining Assistant Level-2) OR 0 to 6 months or more in manufacturing environment Minimum Job Entry Age- 18 years
Progression from the qualification	This entry should refer to one or more of the following: - access to other qualifications at the same NSQF level -NA - access to related qualification(s) at the next NSQF level – Machining Technician L-4 , L-5 and L-6 and Quality inspector L-4, L-5
Planned arrangements for the Recognition of Prior learning (RPL)	Work is under progress
International comparability where known	Not Yet Established
Date of planned review	20/10/2018

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

of the qualification.			
Formal structure of the qualification			
Title of component and identification code.	Mandatory/O ptional	Estimated size (learning hours)	Level
ASC/N3504 Assist in Carrying out pre-machining activities	Mandatory	92	3
ASC/N3505 Support the operator in performing machining operations	Mandatory	125	3
ASC/N3506 Support the operator in conducting all post machining operations	Mandatory	85	3
ASC/N6301 Inspect and maintain the product quality	Mandatory	82	3
ASC/N0006 Maintain a safe and healthy working environment	Mandatory	26	3
ASC/N0021 Maintain 5S at the work premises	Mandatory	65	3

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

1. QP ASC/Q 3509 - Annexure 2

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

SECTION 1

ASSESSMENT

Body/Bodies which will carry out assessment:

If there will be more than one assessment body for this qualification, give details.

ASDC will conduct assessment through ASDC-accredited assessment agency and ASDC-approved assessors.

- 1 Manipal – City & Guilds Pvt Ltd
- 2 Honda Motor India Pvt. Ltd.
- 3 TATA Motors
- 4 KAMT
- 5 Mettl-Assessment Science Expert
- 6 India Skills Pvt. Ltd.
- 7 Green Arrows Safety Management (P) Ltd.
- 8 The Indian Institute of Welding
- 9 Multi Skills Assessors Guild
- 10 Prima Competencies Pvt. Ltd.

- 11 TRENDSETTERS SKILL ASSESSORS PRIVATE LIMITED
- 12 VR Skill & HR Solutions
- 13 Ace Assessments Pvt. Ltd.
- 14 Cognix Knowledge Services (P) Ltd
- 15 Confederation of Indian Industry
- 16 Skills Mantra Edutech Consulting India Pvt. Ltd.

How will RPL assessment be managed and who will carry it out?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

The RPL assessment will be carried out through pre assessment, identifying the skills gaps, provide bridge training to cover the competency gap and then conduct final assessment of the candidates.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

Assessment documents:

Quality Assurance - Assessment & Certification

ASDC Certificate is Auto industry's own certificate and the certificate is expected to carry an assurance of quality. Therefore, the certified candidate should be able to demonstrate all round skills as expected by industry standard ie ASDC NOS/QP.

In order to achieve this objective ASDC needed to have an approach that is process driven whereby the outcomes meet the quality objectives and also display consistency.

Certification is the outcome of Assessment Process. The Process in turn is derived from an overall strategy.

ASDC Assessment Strategy

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

ASDC Assessment Strategy has two components:

- 1 Broad Guidelines provided by NSDC QRC (*Qualifications Registration Committee*)
- 2 ASDC's own *sector specific* overarching strategy, covering all job roles.
 - Any specific assessment approach relating to a particular job role.

1 Broad Guidelines provided by NSDC QRC (*Qualifications Registration Committee*):

- a. Assessment to be conducted by SSC as per competency output defined in the NOS/QP and the assessment criteria provided in the NOS/QP
- b. Assessment to be carried out by a third party Assessment Body duly affiliated to the SSC.
- c. Practical and face to face Viva evaluations, where applicable, to be carried out only by the SSC approved assessor deployed by the Assessing Body deputed by SSC for the given assessment.
- d. Cut off marks for certification could be in the vicinity of 70% level but individual SSC to refine & modify this criteria to suit the sectorial needs.
- e. Assessing Body to declare results with due concurrence of the SSC.

2 ASDC's own sector specific strategy covering all job roles :

- 2.1 ASDC assessments will be comprehensive and cover all aspects of acquired knowledge, practical skills and also basic ability to communicate. Accordingly, evaluation process would include:
 - i. Theory/Knowledge test
 - ii. Practical demonstration test
 - iii. Face to Face Viva
- 2.2 Theory/Knowledge assessment will be carried out on line through a link provided for each assessment that generates a random paper from a bank of questions available at the back end.
 - Exception to an online test in favour of Paper Test would be subject to non-availability of requisite broad band and/or hardware.
 - On line test would be conducted in the presence of an ASDC assessor till web enabled proctoring is deployed.
- 2.3 ASDC assessor would be conducting Practical and Viva as per the criteria provided in the NOS/QP.
- 2.4 ASDC assessor would be carrying out Practical assessment for job roles such as in sales by way of role playing method.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

2.5 ASDC cut offs for accepting a candidate for certification:

Automotive industry has already attained a level of globalization and is on the way to becoming even more integrated into the global supply chains with a big focus by OEMs on sourcing from India. This translates to expectation of high quality skills. In fact, the global integration process would start putting demands on skill quality standards to be in line with transnational standards.

2.6 Also there is an ever increasing quality demands placed by domestic customers.

2.7 Further, the structuring of our industry is such that the different organizations spread across the OEM,

Tier1,

2 manufacturing spectrum are expected to follow common quality standards. Similarly, OEMs and their Dealerships and Service Workshops also require to follow common quality standards. This implies that employees need to follow technical discipline, team work and quality processes.

2.8 ASDC aims to build a quality brand for its certification that clearly meets our industry's expectations.

2.9 The other important consideration is the Level notification by NSQF (National Skills Qualifications Framework) which provides a structure of skills ladder to be followed in the country. This ladder describes the entire skills space to be covered in 10 levels from Level 1 (for mostly menial jobs) and upto Level 10(for mostly strategy level jobs)

2.10 Keeping above points in mind ASDC evolved an acceptance criteria as follows:

- Broadly, overall cut offs to be :

Level 1	60%
Level 2	65%
Level 3	70%
Level 4-10	75%

- Specific Theory/Practical/Viva cut offs to be as per detailed matrix for each QP.

2.11 In line with international practice there is a provision for moderation of marks to account for borderline cases. This process also covers differential moderation possibility across Theory/ Practical/ Viva.

2.12 Moderation could also be necessitated owing to variation between assessors and strictness in marking. This moderation to be carried out by concerned Assessing Body in consultation with ASDC.

2.13 In addition to recording markings of the candidate evaluation, the Assessor will also be recording general observations for every batch as per ASDC format. This record will be useful in carrying out (2.11-2.12) above.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

- Any specific assessment approach relating to a particular job role:
 - o ASDC could consider *only* online test for some job roles such as in Design Engineering /Quality
- ASDC assessment process would also provision a suitable re-evaluation mechanism which would offer a fair chance to the TP/candidates for Obtaining an accurate outcome.
- ASDC assessment process would also provision re assessment of a batch in case the TP has enough reason to opt for this on payment of the due assessment fee.

Assessment Process

- ASDC Training Partner will intimate ASDC for readiness of a batch for assessment preferably 15 days before the intended assessment.
- Within 3 working days ASDC will finalize an Assessing Partner for carrying out the assessment
- Assessing Partner will deploy one or more ASDC approved assessor For carrying out the assessment.
- Theory/Knowledge test of the approximate duration of 30-60 minutes will be conducted online for which the online link will be generated by the ASDC Technology Partner and shared with Assessment Partner.
- Online test will be conducted in the presence of ASDC assessor.(*ASDC is encouraging development of technology enabled proctoring and when this is ready, the online test could be conducted without requiring human proctoring*)
- Exception to an online test in favour of Paper Test would be subject to non-availability of requisite broad band and/or hardware device. Moreover, this could be allowed only after ascertain genuinity of request.
- ASDC assessor would be conducting Practical and Viva as per the criteria provided in the NOS/QP.
- ASDC Assessment Partner will ensure that the assessor to be deployed has complete understanding of the ASDC Assessment Process and the QP/NOS relevant to the assessment.
- Assessor would be reaching the venue well in time and review and on the ground verify the batch information already provided by TP.
- Assessor will then proceed to conduct the assessment as per ASDC Format starting with the attendance.
- Assessor would be capturing Viva and Practical marks on a device that has ASDC assessment link. Technology systems deployed in ASDC assessment process have provision for instantly capturing assessor evaluations in only the standard NOS/QP aligned format.
- In addition to recording markings of the evaluation, the Assessor will also be recording general observations for every batch as per ASDC format as appended below. This record will be useful

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

in carrying out result review process.

Result Processing

- ASDC Assessment Partner responsible for Technology Platform will convert the assessment data captured by Assessor on the device into result matrix and share the same with ASDC
- ASDC Assessment cell will view the results for compliance to process and / or need for moderation in consultation with the Assessing Partner to arrive at final result for the batch as per ASDC acceptance Criteria.
- Assessing Partner will publish finalized results on data base for viewing of the Training Partner
- ASDC would issue a certificate after due verifications of candidate authenticity by way of a unique identification number such as Aadhaar.
- Certificates will be shared preferably in digital form with Training Partners
- Training Partners would be authorized to distribute certificate to candidates after printing them on a standard sheet as per ASDC template.

Re-evaluation of batch result

- Results once published will be treated as final. However, as per ASDC Assessment Strategy, there is need for provisioning a re-evaluation of results if desired by a TP essentially to cover a case where the TPs internal assessments are at large variance with the results.
- Re-evaluation will be done batch wise.
- ASDC Assessment cell will carry out re-evaluation in two steps:
 - o Check for totalling error, if any
 - o Use statistical tools where required to establish a pattern and extent of borderline cases.
 - o Refer to the Assessor feed back form for the given batch
 - o Use a weightage reference table to establish priority of type of assessment eg Theory or Practical or Viva
 - o Where required, share the findings with Assessment Partner for review and concurrence.
 - o Establish a modified range of acceptance based on above
 - o In case of need for moderation based on assessor level variation, to consult the Assessing Partner/Assessor and facilitate moderated values.
 - o Re do the results based on above process
 - o Share the revised results with TP

Quality Assurance & Audit

While the Assessment Process based on a well-defined strategy as above, does have an in built quality assurance, ASDC also has a plan that augments assurance.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

This entails a Quality Audit process as defined below :

There will be a 2 tier Audit of the assessment process:

Tier 1 Audit

- 1 ASDC Assessor will be required to submit a report for each assessment carried out. This report will be as per ASDC format as described in the Assessment Process. The format of the report aims to capture details of the Training Delivery process, soft & hard infrastructure, Training of Trainer, industry connect and overall approach to training delivery vis a vis expectations of ASDC QP/NOS.
- 2 Each Assessment Partner is required to carry out and submit Tier 1 audit reports as per a plan and frequency agreed with ASDC.
- 3 ASDC will continuously review the Tier 1 audit reports for any alarming observation or trend.
- 4 ASDC will develop and execute a suitable action plan to redress the situation as deemed necessary for a given case.

Tier 2 Audit

- 1 ASDC to carry out a Tier 2 level Audit as per a plan being developed.
 - a. Tier 2 audit will be carried out by a third party contracted by ASDC for the purpose.
 - b. Tier 2 audit will provide adequate coverage for variables such as Assessing Partner, Assessor, TP and geographical variations.
- 2 ASDC Assessment cell to review audit findings at least once every month or on sos basis.
- 3 Based on review findings as in 2 above, ASDC to decide on a suitable corrective action plan and execute the same.
- 4 ASDC to record directional needs for refinement of Assessment process specially for incorporation of Technology that could enhance reliability and speed of assessments.

Please attach any documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Job Role: Machining and Quality Technician
Qualification Pack: ASC/Q 3509
Sector Skill Council: Automotive Skills Development Council

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/ training centre (as per assessment criteria below.)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre based on this criteria.
5. To pass the Qualification Pack, every trainee should score a minimum of aggregate 50% in the Qualification Pack.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

CRITERIA FOR ASSESSMENT OF TRAINEES

Title of Component:

Assessable Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Practical Skills
ASC/N3504 Assist in Carrying out pre-machining activities	PC1.understand the output product requirement by reading the engineering drawing specified in the work instructions/ work order	100			11
	PC2.clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors				11
	PC3.reading the control plan instructions/ job orders to determine the correct output product specifications				10
	PC4.understanding the tooling instructions as specified in the Operating Manual/ Work Instructions or Standard				11

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

	Operating Procedures				
	PC5.selection of proper coolant and lubricant required for machining the required component				11
	PC6.set the machine stops or guides as per the specified lengths indicated through scales or work instructions				10
	PC7.measure and mark reference points/ cutting lines on the work pieces, using compasses, calipers, rulers and other measuring tools				11
	All KA, KB for the NOS			25	
		Total	100	25	75
ASC/N3505 Support the operator in performing machining operations	PC1.set-up, adjust machine tools in order to perform machining operations and keep dimension within the specified tolerance limit specified in the Standard Operating Procedures/ Operating manuals	100			7
	PC2.support the operator in aligning and securely hold fixtures, cutting tools etc. onto the machine				6
	PC3.position/ secure/ align cutting tools in tool holders of the machine, using hand tools and verify their positions with measuring instruments				6
	PC4.start lathe or turning/drilling/milling machine for operations				7
	PC5.support in select cutting tools and tooling instructions as per the work instructions / supervisor 's instructions				7
	PC6.operate hand wheels or valves in order to feed the component and allow cooling and lubricating of the same as per the instructions given by the machinist/supervisor				7
	PC7.turn on the coolant valves and start their flow to maintain temperature in the lathe machine chamber				7
	PC8.move tool holders manually or by turning the hand wheels in order to feed tools along the machined component/ piece				6

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

	PC9.observe machine operations to detect defects in the component manufactured				7
	PC10.observe the machine operations for any malfunctions and immediately inform the supervisor of any malfunction observed to prevent damage to the machining equipment/ output product				8
	PC11.support the operator in recording operational data such as pressure readings, length of strokes, feed rates, speed etc in the formats specified by the supervisors				7
	All KA, KB for the NOS			25	
		Total	100	25	75
ASC/N3506 Support the operator in conducting all post machining operations	PC1.maintain the machine as per proper operational condition	100			5
	PC2.perform minor machine maintenance activities such as oiling or cleaning machine and its components				6
	PC3.oiling or cleaning machines as per the schedules given in the maintenance plan				5
	PC4.adding coolant and lubricant in machine reservoir				5
	PC5.with the help of the correct tool remove the extra burrs, sharp edges, rust and chips from the metal surface				5
	PC6.use files, hand grinders, wire brushes, or power tools for performing de burring operations. Ensure usage of Personal Protective equipment like eye glasses and hand gloves.				5
	PC7.for automated processes perform shot blasting/ vibro processes for completing de-burring operations				6
	PC8.support the operator in measuring the specifications of the finished component and verify conformance as per CP/ WI				5
	PC9.use devices like micrometers, vernier calipers, gauges, rulers and any other inspection equipment for measuring specifications with valid calibration status				6
	PC10.support the operator in noting down the observations of the basic inspection process and				5

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

	identify pieces which comply with the specified standards				
	PC11.separate the defective pieces into two categories – pieces which can be repaired/ modified and pieces which are beyond repair and maintain records of each category				5
	PC12.assist the operator in changing different worn machine accessories, such as cutting tools(as per tool life listed, recommended) and brushes, other hand tools				5
	PC13.replace machine part as per work instructions, using hand tools or notify supervisor/ engineering personnel for taking corrective actions				6
	PC14.for automated process observe the tool change cycle in order to ensure that the selected tool is transferred to the spindle from magazine after the previous tool is transferred to the magazine from the spindle				6
	All KA, KB for the NOS			25	
		Total	100	25	75
ASC/N6301 Inspect and maintain the product quality	PC1.conduct the process of Inspection at the stages	100			4
	PC2.handle Inspection equipment and Instruments				4
	PC3.conduct a inspection of the product covering the following checkpoints				4
	PC4.coordinate with the respective process owners/ seniors in QA and implement CAPA for discrepancies in the parameters identified in the report on immediate basis				4
	PC5.participate in checking the effectiveness of implementation and repeat the process till the discrepancies are resolved				4
	PC6.document the observations of the inspection and maintain records of				4
	PC7.IR, ERP-System record and special process capability index calculation/charting as per the SOP raise a scrap note and dispose off the scrapped product in the scrap yard as per the defined procedure				5

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

	maintaining the HSE compliance				
	PC8.As is the case i.e. New product/process development / Production phase, the reports and Part Submission Warrant, PPAP are to be prepared.				4
	PC9.based on the implementation of information flow system in organization like ERP/SAP , upload the reports				5
	PC10.conduct a dock audit of a sample batch from the production lot of the ready to dispatch final products covering the following checkpoints				4
	PC11.coordinate with the respective process owners/Stores and implement CAPA for discrepancies identified in the dock audit on immediate basis				4
	PC12.review the effectiveness of implementation and repeat the process till the discrepancies are resolved				4
	PC13.document the observations of dock audit and maintain records				4
	PC14.based on the implementation of information flow system in organization like ERP/SAP , upload the reports				4
	PC15.work as a CFT member of the team formed for solving a problem pertaining to the products handled .Collect data regarding the problem as decided in the team discussions				5
	PC16.participate for preparation of Fault tree, conducting simulation and implementation of actions				4
	PC17.participate for updating relevant documentation				4
	PC18.assist the NPD department in efficient development of the new product by sharing all the problems related to QCD observed in the existing products				4
	All KA, KB for the NOS			25	
		Total	100	25	75

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

ASC/N0006 Maintain a safe and healthy working environment	PC1.identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	100			7
	PC2.inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc				7
	PC3.inform the concerned authorities about damages which can potentially harm man/ machine during operations				7
	PC4.create awareness amongst other by sharing information on the identified risks				7
	PC5.follow the instructions given on the equipment manual describing the operating process of the equipments				6
	PC6.follow the Safety, Health and Environment related practices developed by the organization				6
	PC7.operate the machine using the recommended Personal Protective Equipments (PPE)				6
	PC8.maintain a clean and safe working environment near the workplace and ensure there is no spillage of chemicals, production waste, oil, solvents etc				7
	PC9.maintain high standards of personal hygiene at the work place				5
	PC10.ensure that the waste disposal takes place in the designated area as per organization SOP				7
	PC11.inform appropriately 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				5
	All KA, KB for the NOS			30	
		Total	100	30	70
ASC/N0021 Maintain 5S at the work premises	PC1.follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the workbenches or work surfaces	100			3

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

PC2.ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions			3
PC3.follow the technique of waste disposal and waste storage in the proper bins as per SOP			3
PC4.segregate the items which are labeled as red tag items for the process area and keep them in the correct places			3
PC5.sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions			3
PC6.ensure that areas of material storage areas are not overflowing			2
PC7.properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required			3
PC8.return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area			3
PC9.follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards			3
PC10.follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists			3
PC11.check that the items in the respective areas have been identified as broken or damaged			3
PC12.follow the given instructions and check for labeling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.			3
PC13.make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions			3
PC14.check whether safety glasses are clean and in good condition			2

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

	PC15. keep all outside surfaces of recycling containers are clean				2
	PC16. ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards				3
	PC17. check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up				3
	PC18. ensure workbenches and work surfaces are clean and in good condition				2
	PC19. follow the cleaning schedule for the lighting system to ensure proper illumination				3
	PC20. store the cleaning material and equipment in the correct location and in good condition				2
	PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene				3
	PC22. follow the daily cleaning standards and schedules to create a clean working environment				3
	PC23. attend all training programs for employees on 5 S				2
	PC24. support the team during the audit of 5 S				2
	PC25. participate actively in employee work groups on 5S and encourage team members for active participation				3
	PC26. follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions				2
	All KA, KB for the NOS			30	
		Total	100	30	70

Means of assessment 1

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

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below.)

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

Means of assessment 2 Viva / face to face interview and practical test to be carried out by ASDC assessor as per the QP Assessment Criteria. (Please refer section 1)

Pass/Fail

To pass the Qualification Pack, every trainee should score an aggregate of 70% in the qualification pack.

In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

SECTION 2

EVIDENCE OF LEVEL

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

OPTION A

Title/Name of qualification/component:		Level:	
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF level descriptors	NSQF Level
Process			
Professional knowledge			
Professional skill			
Core skill			
Responsibility			

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

OPTION B

Title/Name of qualification/component: Machining and Quality Technician		Level: 3	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	The Individual must be able to perform tasks like pre-machining activities either manually or through specialized techniques as per the given work order and the standards specified by the organization. Also he should support machining, post machining and inspection of products.	The Operator is closing pre- machining activity and supporting machining and post machining operations and inspection to maintain product quality. This requires skill which is routine and predictable. It is therefore level 3 jobs.	3
Professional knowledge	The individual on the job needs factual knowledge of different types of machining processes and tools used in the machining process with respect to type of process to be conducted. knowledge of 5 S in manufacturing – Cleaning, sorting etc	The operator does pre machining and some other support jobs which require basic knowledge of machines and related processes which are routine nature. Since requirement is basic and repetitive it is level 3 NSQF.	3
Professional skill	The individual on the job needs to recall and demonstrate practical skill like planning work assigned on a daily basis and provide estimates of time required for each piece of work. prioritizing actions to achieve required outcomes	The Operator has to plan his job and carry out in a time frame. he sometimes need to analysis problem and try to find solutions. The skill required is basic and repeat nature. This is therefore level 3 NSQF level.	3
Core skill	The individual on the job must be able to read, write and draw basic level drawings and charts	For the operator to perform a quality job. he should be able to read, understand drawing & communicate clearly	3

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Machining and Quality Technician			Level: 3
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	to discuss task lists and job requirements with co-workers and effectively communicate information to team members.	with team and seniors. Also he needs to make report and be able to write notes. Since skill required is of repeat and routine nature. It is level 3 NSQF.	
Responsibility	The individual on the job works under close supervision and is responsible for supporting the machine operator in all pre-machining activities, machining of the actual part, ad hoc repair work like in auto service stations, gauging, de-burring and inspection activities.	The Operator does pre-machining, machining and past machining operations under supervision and has some responsibility only his own job. It is level 3 NSQF.	3

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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

This job role was identified during industry engagement for development of Occupational Map.

The total number of industry validations for this QP are:

Large =19

Medium=24

Small=20

What is the estimated uptake of this qualification and what is the basis of this estimate?

Skill GAP analysis carried out by a reputed research agency provided a broad estimate of demand. The report can be referred in the Common Files. ASDC is taking initiative to develop a labour market information database that would peg the demand more accurately- job role wise as well as based on geographical spread. Key enabler segments for the core segments of the Automotive Industry include Auto Insurance, Financiers, Mechanics, and Auto Dealers etc.

Based on the current growth profile in the Indian auto Industry, it is expected that an additional 2~2.5 million employment opportunities per annum will be created in the Indian auto industry over the next decade. The details below provide the manpower requirement at various levels:

- Skill Level 1 – 4 , people, Demand for such manpower is expected to be around 15 – 18 lakh per annum.
- Skill Level 5 -6 people working as supervisors on the shop floor. Demand for such manpower if expected to be around 4 lakh per annum.
- Skill Level 5- 7 people includes primarily engineers (B.E., M. Tech., MS), working in managerial grade, and demand for such manpower is expected to be around 1 lakh per annum.
- Skill Level 6-10 people are executives, including engineers and doctorates, and demand for such manpower is expected to be around 0.5 lakh per annum.

What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

The qualification discussed above is checked for any duplication across sectors and given the qualification niche to ASDC sector, there is no duplication or already existing similar qualifications

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The comments, feedback and suggestions were collected through interaction with industry. The same will be compiled and justifiable changes will be incorporated in the next/updated version of the QP. This QP is set to be revised post 24th November 2018.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

SECTION 4

EVIDENCE OF PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

1. Discussing the growth trajectory within each occupation after studying organisational charts of various industry players across small, medium and large scale organizations.
2. Exploring various lateral career opportunities for the discussed qualification
3. Ensuring that there is a clear role up in terms of performance criteria qualification experience and skill requirement from lower NSQF Level to higher levels in the hierarchy.

Please refer to attached career path as per annexure 1 which clearly defines the career path.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

1. Career Map of Machining and Quality Technician - Annexure 1
2. QP ASDC/Q 3509- Annexure 2

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Version 6: Draft of 08 March 2016

Annexure 1: Career Map

	MACHINING	QUALITY ASSURANCE
LEVEL 10		
LEVEL 9		
LEVEL 8		
LEVEL 7		Manager /Supervisor Manufacturing Quality (ASC/Q 6306)
LEVEL 6	Machine Setter / Master Technician (ASC/Q 3506)	Manager Supplier Quality (ASC/Q 6302)
LEVEL 5	Machine shop supervisor (ASC/Q 3505)	QA Standards Incharge (ASC/Q 6305)
LEVEL 4	CNC Operator / Machining Technician L4 (ASC/Q 3503)	QC Inspector Level 4 (ASC/Q 6303)
LEVEL 3	Machining and Quality Technician L3 (ASC/Q 3509)	

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Annexure 2: QP ASDC/Q