Qualification Pack

Engraver - Gemstone Processing

QP Code: G&J/Q6702

Version: 1.0

NSQF Level: 4

Contents

G&J/Q6702: Engraver - Gemstone Processing

Brief Job Description

The individual works with high-speed rotating machines and individual sets of hand-made tools to etch out patterns on gemstones for further polishing and use in jewellery making. It is a traditional and highly creative role. The person is also called, Naqquashi maker, the Engraver carves out different types of patterns on precious and semi-precious gemstones

Personal Attributes

The job requires the individual to have: creativity; attention to details; good eyesight; firm grip; ability to work for longer duration with correct sitting posture while performing a task

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. G&J/N6705: Carve patterns on gemstones

2. G&J/N9901: Coordinate with others

3. G&J/N9902: Maintain health and safety at workplace

Qualification Pack (QP) Parameters

Sector	Gem & Jewellery
Sub-Sector	Gemstone Processing
Occupation	Gemstone Shaping, Faceting and Polishing
Country	India
NSQF Level	4
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7313.1900

Minimum Educational Qualification & Experience	12th Class with 1 Year of experience OR 10th Class with 3 Years of experience OR NSQF Level 3 - Gemstone Polisher with 2 years of experience OR NSQF Level 3 – Pre-shaper with 2 years of experience OR NSQF Level 3 - Gemstone Processor with 2 years of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	17/01/2018
Next Review Date	31/03/2022
NSQC Approval Date	06/04/2022
Version	1.0

G&J/N6705: Carve patterns on gemstones

Description

This OS unit is about carving design patterns on gemstones by using hand and machine tools

Scope

The scope covers the following :

- This unit/task covers the following:
- Checking bag of faceted gemstones received from supervisor
- Carving and etching patterns on the gemstone
- Polishing and calibrating the carved gemstone
- Maintaining Quality
- Achieving productivity

Elements and Performance Criteria

Checking bag of faceted gemstones received from supervisor

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

PC1. match the stone type, weight and number as mentioned on the bag

PC2. check shape and size of stone as per job sheet for symmetry and colour defects and potential problems in carving process

PC3. check the permitted level of stone loss

PC4. comprehend the type of stone to be polished such as soft or hard, transparent or translucent or opaque

Carving and etching patterns on the gemstone

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

PC5. mark patterns on the stone as per design to be carve mark design pattern on the stone as per the design given on the job sheet to be carved and ensure the same is followed thorough out the process

PC6. select the hand or machine tool to be used for carving

PC7. select rotating machine speed for the type of stone, tool and pattern

PC8. use water jet to reduce adverse effect of overheating of stone, such as change of colour or breakage

PC9. maintain and calibrate for shape, size of the gemstones as per design

PC10. avoid damage to any facets that were previously created

PC11. use correct lap, powder and buff

PC12. ensure to attain maximum number of qc approved carved gemstones

Polishing and calibrating the carved gemstone

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

PC13. select the buffing plate to be used for the stone type such as cloth, wool, wood according to the stone hardness and colour changing properties and polish

PC14. calibrate the gemstone as per job sheet and allowed losses

Maintaining Quality

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

PC15. return the carved gemstones for quality check

PC16. return any damaged stones

PC17. rework based on feedback from quality control department

Achieving productivity

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

PC18. meet the target for the number of carved stones per day

PC19. deliver scratch-less and well-polished stones as per job sheet

PC20. maintain, stone loss within prescribed limits, particularly, in precious stones

PC21. create new designs in accordance with changing customer preferences and companys targets

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. companys policies on: acceptable limits of stone loss, incentives, delivery standards, safety and hazards, integrity and personnel management

KU2. non-disclosure of confidential information provided by the company either orally or in writing marked as confidential

KU3. liability arising out of loss, theft or inadvertent disclosure of confidential information

KU4. work flow involved in gemstone processing of company

KU5. importance of the individuals role in the workflow

KU6. reporting structure

KU7. the process of shaping, faceting and polishing

KU8. basic gemology and properties of different stones

KU9. different types of stones such as precious, semi-precious, synthetic etc.

KU10. market value of stone to understand the rationale for different acceptable levels of stone loss

KU11. origin of the stone, i.e., which mine it has originated from, particularly, precious stones to read the softness/ hardness as developed from precedence of use

KU12. tools to be used for different types of carving and etching and stones

KU13. make different types of pointed tools for etching and carving

KU14. how to maintain rotating machine and tools

KU15. many different types of laps available in terms of material such as diamond or steel or the grits

KU16. how to use water jet and keep the stone cool

KU17. how to use different types of buff for different stone types such as wool, wood, and leather and buffing powders such as chrome oxide

KU18. how to work in a safe environment, i.e., without injuries

Generic Skills (GS)

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

GS1. report any stone loss via documentation as per company policy

GS2. read height, weight, dimensions of the stones as given on job sheets

GS3. read company rules and compliance documents required to complete the work

GS4. receive instructions and materials from reporting supervisor

GS5. give feedback to supervisor or co-workers on any specific stone handling requirement

GS6. share work load when multiple deliverables are required

GS7. decide on correct use of machines, tools and consumables for carving

GS8. plan and organize the work bench for efficient working

GS9. adhere to specification, as required by the customer

GS10. resolve the problem faced, by referring to reporting authority

GS11. deliver carved stones in time by reporting problems faced or anticipated well in advance

GS12. create new tools for new design patterns, if necessary

GS13. control losses during engravings

GS14. convert the stone plan on job sheet to a carved and polished stone

GS15. spot difficulties with respect to practicality of plan or facets created

GS16. improve work processes or greater productivity

GS17. spot process disruption and reasons for delay

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Checking bag of faceted gemstones received from supervisor	**4**	**4**	**-**	**-**
PC1. match the stone type, weight and number as mentioned on the bag	1	1	-	-
PC2. check shape and size of stone as per job sheet for symmetry and colour defects and potential problems in carving process	1	1	-	-
PC3. check the permitted level of stone loss	1	1	-	-
PC4. comprehend the type of stone to be polished such as soft or hard, transparent or translucent or opaque	1	1	-	-
Carving and etching patterns on the gemstone	**4**	**21**	**-**	**-**
PC5. mark patterns on the stone as per design to be carve mark design pattern on the stone as per the design given on the job sheet to be carved and ensure the same is followed thorough out the process	2	3	-	-
PC6. select the hand or machine tool to be used for carving	-	3	-	-
PC7. select rotating machine speed for the type of stone, tool and pattern	-	3	-	-
PC8. use water jet to reduce adverse effect of overheating of stone, such as change of colour or breakage	-	2	-	-
PC9. maintain and calibrate for shape, size of the gemstones as per design	1	3	-	-
PC10. avoid damage to any facets that were previously created	-	3	-	-
PC11. use correct lap, powder and buff	1	2	-	-
PC12. ensure to attain maximum number of qc approved carved gemstones	-	2	-	-
Polishing and calibrating the carved gemstone	**1**	**4**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. select the buffing plate to be used for the stone type such as cloth, wool, wood according to the stone hardness and colour changing properties and polish	-	3	-	-
PC14. calibrate the gemstone as per job sheet and allowed losses	1	1	-	-
Maintaining Quality	**1**	**5**	**-**	**-**
PC15. return the carved gemstones for quality check	-	1	-	-
PC16. return any damaged stones	-	1	-	-
PC17. rework based on feedback from quality control department	1	3	-	-
Achieving productivity	**4**	**12**	**-**	**-**
PC18. meet the target for the number of carved stones per day	1	2	-	-
PC19. deliver scratch-less and well-polished stones as per job sheet	1	4	-	-
PC20. maintain, stone loss within prescribed limits, particularly, in precious stones	1	2	-	-
PC21. create new designs in accordance with changing customer preferences and companys targets	1	4	-	-
NOS Total	**14**	**46**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	G&J/N6705
NOS Name	Carve patterns on gemstones
Sector	Gem & Jewellery
Sub-Sector	Gemstone Processing
Occupation	Faceting and Polishing
NSQF Level	4
Credits	TBD
Version	1.0
Next Review Date	17/01/2022

G&J/N9901: Coordinate with others

Description

This OS unit is about communicating with colleagues, seniors and outside parties in order to achieve the deliverables as per schedule

Elements and Performance Criteria

Interacting with supervisor

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

PC1.   coordinate for receiving work instructions and raw materials from reporting supervisor

PC2.   communicate to the reporting supervisor about process flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required

PC3.   communicate to reporting supervisor about operation details and hazards

PC4.   interact with supervisor regarding compliance of company policy and rules

Interacting with colleagues within and outside the department

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

PC5.   coordinate with colleagues to share work, as per the workload in order to achieve team goals

PC6.   communicate and discuss work flow related difficulties in order to find solutions with mutual agreement

PC7.   coordinate and receive feedback from quality control department

PC8.   resolve conflicts by communicating with colleagues and other departments

PC9.   communicate and discuss work coordinate with colleagues regarding multitasking in other departments with requirements

Interacting with outside parties

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

PC10.   adhere to nondisclosure policy of the company in all outside coordination

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1.   companys policies on: preferred language of communication, reporting and escalation policy, quality delivery standards and personnel management

KU2.   companys policies on non-disclosure of confidential information provided by the company either orally or in writing marked as confidential

KU3.   liability arising out of loss, theft or inadvertent disclosure of confidential information

KU4.   reporting structure

KU5.   various categories of people that one is required to communicate and coordinate within the organization

KU6.   importance of effective communication in the workplace like expressing and addressing grievances appropriately and effectively

KU7.   importance of teamwork in organization and individual success

KU8.   various components of effective communication

KU9. barriers to effective communication

KU10. common reasons for interpersonal conflict

KU11. what constitutes disciplined behavior for a working professional

Generic Skills (GS)

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

GS1. write instructions, remarks, job sheets, basic information, technical details etc. in preferred local language of communication and english

GS2. read preferred language of communication as prescribed by the company

GS3. read job sheets and interpret technical details mentioned in the job sheet

GS4. discuss task lists, schedules, and work-loads with co-workers

GS5. be a good listener

GS6. be effective in communicating the issues faced, to the supervisor

GS7. avoid using jargon, slang or acronyms when communicating

GS8. how to spot and communicate potential areas of disruptions in the work process and report the same

GS9. how to report supervisor or deal with a colleague individually, depending on the type of concern

GS10. how to plan work for maximum productivity

GS11. how to plan and organize the schedule for maintenance of tools and machines

GS12. how to convey accurate information to relevant internal as well as external customers

GS13. how to handle critical situations caused due tocommunication issuesat workplace and solve problems without blaming others

GS14. how to analyse the work processes by interacting with others and adopting best practices

GS15. how to use prior experience to observe and reflect for development of ideas

GS16. how to think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)

GS17. how to deal with clients lacking the technical background to solve the problem on their own

GS18. how to spot process disruptions, delays and report and communicate with solutions

GS19. how to identify immediate or temporary solutions to resolve delays

GS20. how to apply, analyze and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Interacting with supervisor	-	**6**	-	-
PC1. coordinate for receiving work instructions and raw materials from reporting supervisor	-	1	-	-
PC2. communicate to the reporting supervisor about process flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required	-	1	-	-
PC3. communicate to reporting supervisor about operation details and hazards	-	1	-	-
PC4. interact with supervisor regarding compliance of company policy and rules	-	3	-	-
Interacting with colleagues within and outside the department	**2**	**10**	-	-
PC5. coordinate with colleagues to share work, as per the workload in order to achieve team goals	-	3	-	-
PC6. communicate and discuss work flow related difficulties in order to find solutions with mutual agreement	-	2	-	-
PC7. coordinate and receive feedback from quality control department	1	1	-	-
PC8. resolve conflicts by communicating with colleagues and other departments	-	2	-	-
PC9. communicate and discuss work coordinate with colleagues regarding multitasking in other departments with requirements	1	2	-	-
Interacting with outside parties	**1**	**1**	-	-
PC10. adhere to nondisclosure policy of the company in all outside coordination	1	1	-	-
NOS Total	**3**	**17**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	G&J/N9901
NOS Name	Coordinate with others
Sector	Gem & Jewellery
Sub-Sector	Jewellery Retail, Cast and diamonds-set jewellery
Occupation	Appraising and Valuation
NSQF Level	5
Credits	TBD
Version	2.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

G&J/N9902: Maintain health and safety at workplace

Description

This OS unit is about being aware of, communicating and taking steps towards minimizing potential hazards and dangers of accidents on the job and maintaining health and safety at workplace.

Elements and Performance Criteria

Health and safety in work area

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

PC1.   identify and use appropriate protective clothing/equipment for specific tasks and work

PC2.   identify hazardous job activities in his/her job and communicate the possible causes of risks or accidents in the workplace

PC3.   carry out safe working practices while dealing with hazards to ensure safety of self and others

PC4.   identify and avoid doing any tasks or activities in a wrong posture

PC5.   practice appropriate working postures to minimise occupational health related issues

Fire safety

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

PC6.   use the appropriate fire extinguishers on different types of fire

PC7.   demonstrate rescue techniques applied during fire hazard

PC8.   demonstrate good housekeeping in order to prevent fire hazards

PC9.   demonstrate the correct use of any fire extinguisher

Emergencies, rescue and first aid procedures

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

PC10.   administer appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.

PC11.   respond promptly and appropriately to an accident or medical emergency

PC12.   participate in emergency procedures such as raising alarm, safe evacuation, correct means of escape, correct assembly point etc.,

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1.   companys policies on: safety and hazards and personnel management

KU2.   names and location of documents that refer to health and safety in work place

KU3.   reporting structure

KU4.   meaning of hazards and risks

KU5.   health and safety hazards commonly present in the work place and related precautions

KU6.   various dangers associated with use of electrical equipment

KU7.   preventative and remedial actions to be taken in case of exposure to toxic material

KU8.   methods of accident prevention

KU9. how different chemicals react and the related hazards

KU10. how to use machines and tools without causing any accident

KU11. importance of using protective clothing/ equipment while working

KU12. precautionary activities to prevent the fire accident

KU13. various causes of fire

KU14. techniques of using different fire extinguishers

KU15. different materials used for extinguishing fire

KU16. rescue techniques applied during a fire hazard

KU17. various types of safety signs and their meaning

KU18. appropriate basic first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.,

KU19. casualty lifting in case of an accident caused to a person

Generic Skills (GS)

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

GS1. read and comprehend basic content to read labels, charts, signages

GS2. read and comprehend basic english to read manuals of operations

GS3. communicate effectively the risk of not following safety measures

GS4. respond to emergencies/accidents, by taking an appropriate and timely decision

GS5. organize work schedule, work area, tools, equipment and material to minimize health and safety risk

GS6. ensure appropriate action in case of any emergencies, accidents or fire at the work location

GS7. analyze untoward incidents from the past and implement correct use of machines, tools or hazardous chemicals

GS8. critically analyze the processes carried out by self and colleagues in the department to spot potential hazards and safety issues

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Health and safety in work area	**1**	**7**	**-**	**-**
PC1. identify and use appropriate protective clothing/equipment for specific tasks and work	-	2	-	-
PC2. identify hazardous job activities in his/her job and communicate the possible causes of risks or accidents in the workplace	-	1	-	-
PC3. carry out safe working practices while dealing with hazards to ensure safety of self and others	-	1	-	-
PC4. identify and avoid doing any tasks or activities in a wrong posture	-	2	-	-
PC5. practice appropriate working postures to minimise occupational health related issues	1	1	-	-
Fire safety	**-**	**6**	**-**	**-**
PC6. use the appropriate fire extinguishers on different types of fire	-	1	-	-
PC7. demonstrate rescue techniques applied during fire hazard	-	2	-	-
PC8. demonstrate good housekeeping in order to prevent fire hazards	-	1	-	-
PC9. demonstrate the correct use of any fire extinguisher	-	2	-	-
Emergencies, rescue and first aid procedures	**2**	**4**	**-**	**-**
PC10. administer appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.	-	1	-	-
PC11. respond promptly and appropriately to an accident or medical emergency	1	2	-	-
PC12. participate in emergency procedures such as raising alarm, safe evacuation, correct means of escape, correct assembly point etc.,	1	1	-	-
NOS Total	**3**	**17**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	G&J/N9902
NOS Name	Maintain health and safety at workplace
Sector	Gem & Jewellery
Sub-Sector	Jewellery Retail, Cast and diamonds-set jewellery
Occupation	Appraising and Valuation
NSQF Level	5
Credits	TBD
Version	2.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

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

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

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

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

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

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

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

Minimum Aggregate Passing % at QP Level : 70

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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
G&J/N6705.Carve patterns on gemstones	14	46	0	0	60	80
G&J/N9901.Coordinate with others	3	17	-	-	20	10
G&J/N9902.Maintain health and safety at workplace	3	17	-	-	20	10
Total	**20**	**80**	**-**	**-**	**100**	**100**

Acronyms

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

Glossary

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

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