

## QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS AND JEWELLERY INDUSTRY

### CONTENTS

1. Introduction and Contacts.....[P1]
2. Qualifications Pack.....[P3]
3. Glossary of Key Terms .....[P4]
4. OS Units.....[P6]
5. Annexure: Nomenclature for QP & OS.[P30]
6. Assessment Criteria.....[P32]



### 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- Bruter- Diamond Processing (Option): Laser Bruting

**SECTOR:** GEMS & JEWELLERY

**SUB-SECTOR:** Diamond processing

**OCCUPATION:** Bruting and coning

**REFERENCE ID:** G&J/Q4505

**ALIGNED TO:** NCO-2015/NIL

**Brief Job Description:** The individual works with bruting machine and another diamond or wheel (rotating in opposite direction to the diamond being bruted) or with laser machine to give the rough diamond round and cone shapes. A bruter must be careful while aligning the marking and setting parameter so that excess bruting does not cause too much stone loss or sub-optimal bruting causes the girdle to disappear at a later stage of processing. Also known as Bruter or Coner, the auto bruter provides round girdle and cone shape to the sawed rough diamond with the help of bruting machine/rotating wheel or laser machine.

**Option 1 - Laser Bruter :**

This unit is about giving the diamond its basic round and conical shape by using the laser machine in which the doped diamond is placed on a platform, aligned and cut using a laser beam. The objective is to ensure that a perfectly round girdle is formed and the pavilion and crown is coned, while maximizing yield as per planned dimensions.

**Personal Attributes:**

The job requires the individual to have: attention to details; good eyesight; steady hands; ability to work in a process driven team; ability to work for long hours in sitting position in front of a screen; high level of concentration; and a lot of patience.

Job Details

<b>Qualifications Pack Code</b>	<b>G&amp;J/Q4505</b>		
<b>Job Role</b>	<b>Bruter – Diamond Processing</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Gems &amp; Jewellery</b>	<b>Drafted on</b>	<b>28/08/2016</b>
<b>Sub-sector</b>	<b>Diamond Processing</b>	<b>Last reviewed on</b>	<b>10/11/2017</b>
<b>Occupation</b>	<b>Bruting and Coning</b>	<b>Next review date</b>	<b>10/11/2021</b>
<b>NSQC Clearance on*</b>	<b>DD/MM/YYYY</b>		

\* only after clearance from NSQC

<b>Job Role</b>	<b>Bruter – Diamond Processing (Laser Bruter)</b>
<b>Role Description</b>	Creating the round girdle of the diamond and giving a conical shape to the pavilion and crown area, maximizing yield while maintaining its dimensions as per plan, using the bruting machine/laser machine
<b>NSQF level</b>	3
<b>Minimum Educational Qualifications*</b>	8th Standard
<b>Maximum Educational Qualifications*</b>	Not applicable
<b>Prerequisite License or Training</b>	Not applicable
<b>Minimum job entry age</b>	18 years
<b>Experience</b>	Not applicable
<b>Applicable National Occupational Standards (NOS)</b>	<p><b>Compulsory:</b></p> <ol style="list-style-type: none"> <li><a href="#">G&amp;J/N4501 Fix the diamond for Bruting</a></li> <li><a href="#">G&amp;J/N4503 Brute and cone the diamond with Bruting Machine</a></li> <li><a href="#">G&amp;J/N9901 Coordinate with others</a></li> <li><a href="#">G&amp;J/N9902 Maintain health and safety at workplace</a></li> </ol> <p><b>Options (not mandatory):</b></p> <p><b>Option 1. Laser Bruter</b></p> <ol style="list-style-type: none"> <li><a href="#">G&amp;J/N4504 Brute and cone the diamond with Laser machine</a></li> </ol>
<b>Performance Criteria</b>	As described in the relevant OS units

Definitions

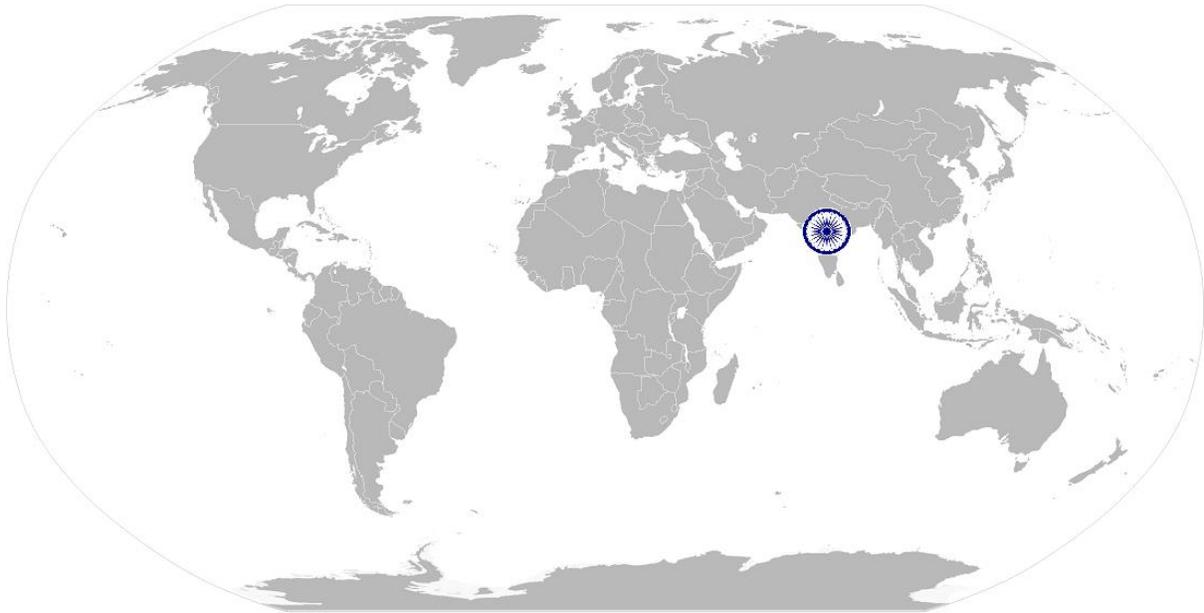
Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further 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 they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (OS)	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	Knowledge and understanding 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	Core skills or generic skills 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. In the context of the OS, these include communication related skills that are applicable to most job roles.

Acronyms

Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack

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# National Occupational Standard



## Overview

This unit is a key pre-bruting stage in diamond processing. Sawed/cleaved roughs are placed onto dop pots as per size, fixed using an adhesive and aligned for the purpose of bruting and coning on bruting machine/laser machine.

**G&J/N4501**

**Fix the diamond for bruting**

<b>Unit Code</b>	<b>G&amp;J/N4501</b>
<b>Unit Title (Task)</b>	<b>Fix the diamond for bruting</b>
<b>Description</b>	This OS unit is about fixing sawed rough diamond in the pot with accurate alignment
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Setting rough in the holder</li> <li>• Maintaining productivity</li> <li>• Controlling defects</li> <li>• Reporting problems to reporting authority</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Setting rough in the holder</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. compare the specifications of the roughs such as shape, size and quantity, as per those mentioned on the rough diamond packet issued by supervisor</p> <p>PC2. select the correct dop for the size of the rough to be brutted</p> <p>PC3. fix rough as per the brutting required using adhesive either prescribed by company or recommended by machine manufacturer, with accuracy</p> <p>PC4. to align and level the rough on the dop accurately</p>
<b>Maintaining productivity</b>	<p>PC5. achieve the productivity in terms of carats or number of pieces as set by the company</p> <p>PC6. ensure delivery for further processing is not delayed</p>
<b>Controlling defects</b>	PC7. ensure no damage to the rough during fixing process
<b>Reporting problems to reporting authority</b>	<p>PC8. report mismatch in rough issued and received</p> <p>PC9. report unclear marking and report</p> <p>PC10. report defective or inadequate number of dops/ pots</p> <p>PC11. report inadequate quantity of consumable such as adhesives</p> <p>PC12. report machine break down or wear and tear of tools, etc.</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b>	<p>The individual on the job needs to know and understand:</p> <p>KA1. Company's policies on: acceptable limits of weight loss; incentives; delivery standards; safety practices and hazards; security and performance measurement</p> <p>KA2. Non-disclosure of "confidential information" provided by the company either orally or in writing marked as confidential</p> <p>KA3. Liability arising out of loss, theft, or inadvertent disclosure of confidential information</p> <p>KA4. Work flow involved in company's diamond processing process</p> <p>KA5. Importance of the individual's role in the workflow</p> <p>KA6. Reporting structure</p> <p>KA7. Issue return procedures followed by the company</p>

**G&J/N4501**

**Fix the diamond for bruting**

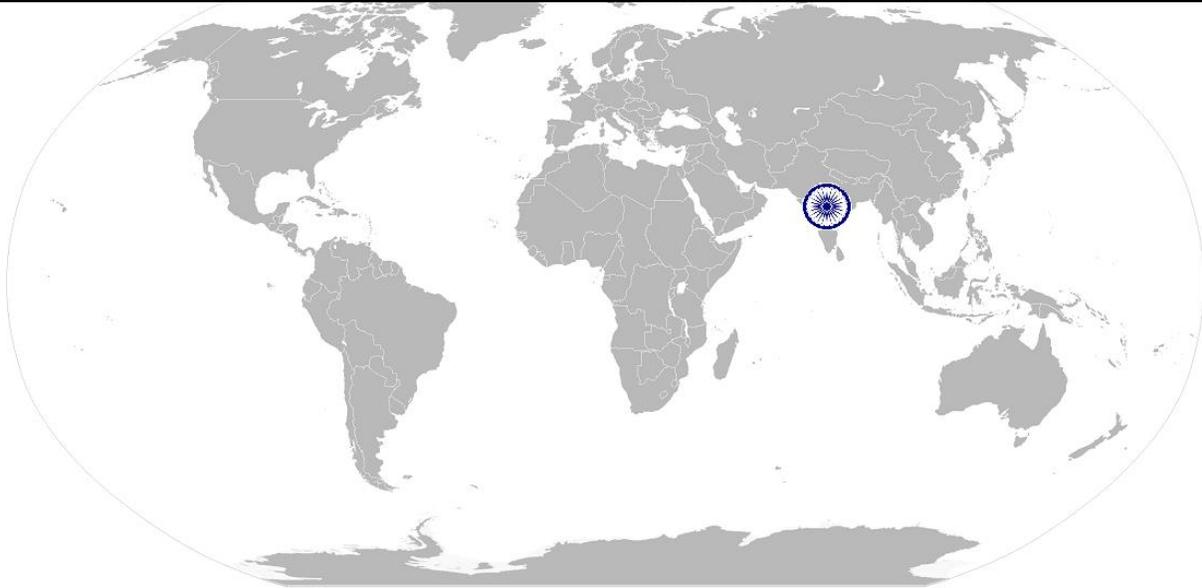
<p><b>B. Technical Knowledge</b></p>	<p>KB1. Shape, cut, clarity, carat, and physical characteristics of the diamond to be fixed</p> <p>KB2. Accurate fixing of roughs on dope or holder as per planned brut</p> <p>KB3. Heat sensitivity of different types of adhesives such as temperature, duration</p> <p>KB4. Potential work hazards</p> <p>KB5. Use of magnifying camera with screen or an eye glass in order to check alignment</p>
<p><b>Skills (S) [Optional]</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/individual on the job needs to know and understand how:</p> <p>SA1. To document work done for status and performance appraisal</p> <p><b>Reading Skills</b></p> <p>SA2. To read descriptions on the diamond packets/ bags</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>SA3. To discuss task, schedules, and work-loads with co-workers and supervisors</p> <p>SA4. To understand instructions and report problems</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p> <p>SB1. Select correct dop as per size of rough diamond and marking.</p> <p>SB2. The rough needs to be fixed for a particular bruting and coning requirement</p> <p><b>Plan and Organize</b></p> <p>SB3. To work in a safe environment, i.e., without injuries</p> <p>SB4. To minimize damage or loss of any diamond during the doping process</p> <p>SB5. To handle diamonds with care</p> <p><b>Customer Centricity</b></p> <p>N.A.</p> <p><b>Problem Solving</b></p> <p>SB6. To identify the factors such as quality of the glue/white cement, tools and machines used, that contribute to the fixing of roughs</p> <p>SB7. To identify immediate or temporary solutions to avoid delays</p> <p><b>Analytical Thinking</b></p> <p>SB8. To plan the work to improve productivity and quality of setting the rough</p> <p><b>Critical Thinking</b></p> <p>SB9. To spot process disruptions and delays</p>

**G&J/N4501**

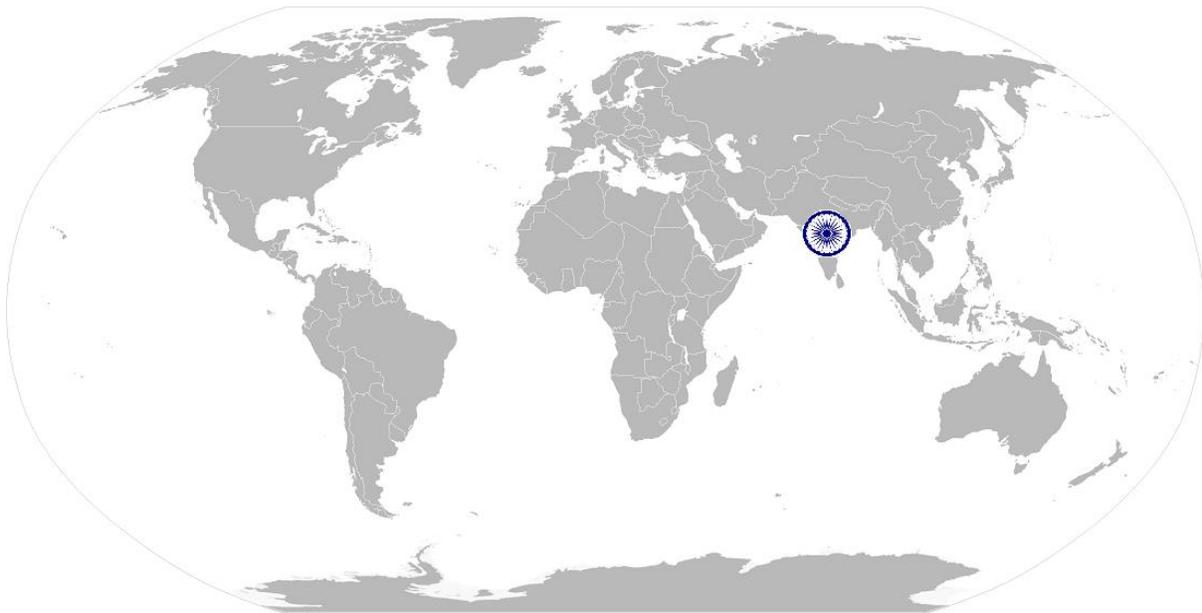
**Fix the diamond for bruting**

## **NOS Version Control**

<b>NOS Code</b>	<b>G&amp;J/N4501</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Gems &amp; Jewellery</b>	<b>Drafted on</b>	<b>28/08/2016</b>
<b>Industry Sub-sector</b>	<b>Diamond Processing</b>	<b>Last reviewed on</b>	<b>10/11/2017</b>
<b>Occupation</b>	<b>Bruting and Coning</b>	<b>Next review date</b>	<b>10/11/2021</b>



# National Occupational Standard



## Overview

This unit is about giving the diamond its basic round or conical shape by using the bruting machine in which the doped diamond rubbed against a second spinning wheel of diamond or ceramic. The objective is to ensure that a perfectly round girdle is formed and the pavilion and crown is coned, while maximizing yield as per planned dimensions.

**G&J/N4503**

**Brute and cone the diamond with bruting machine**

<b>Unit Code</b>	<b>G&amp;J/N4503</b>
<b>Unit Title (Task)</b>	<b>Brute and cone the diamond with bruting Machine</b>
<b>Description</b>	This OS unit is about giving the basic round and conical shape to the rough diamond in the proportion and symmetry as per the planning or the objective fixed by the company
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Operating the bruting/coning machine</li> <li>• Maintaining quality of bruting</li> <li>• Ensuring productivity</li> <li>• Controlling defects</li> <li>• Multitasking</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Operating the bruting/coning machine</b>	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. ensure the dop is placed in the machine holder with precision</li> <li>PC2. align the bruting line with the marking of the diamond with accurately to achieve proper cut</li> <li>PC3. enter the parameters, such as dimensions in the computer</li> <li>PC4. ensure the angle of the diamond or the wheel for coning process is precisely done</li> <li>PC5. steady control of the lever for the to- and-fro bruting and coning process</li> </ul>
<b>Maintaining quality of bruting</b>	<ul style="list-style-type: none"> <li>PC6. create a perfectly round girdle</li> <li>PC7. carry out bruting and coning of the roughs as prescribed</li> <li>PC8. label and bag the bruted diamonds before returning</li> </ul>
<b>Ensuring productivity</b>	<ul style="list-style-type: none"> <li>PC9. achieve the productivity in terms of carats or number of pieces as set by the company</li> <li>PC10. achieve timely delivery for further processing</li> <li>PC11. maintain cycle time</li> </ul>
<b>Controlling defects</b>	<ul style="list-style-type: none"> <li>PC12. ensure diamond is not damaged while girdle marking</li> <li>PC13. minimize damage, weight loss and breakage</li> <li>PC14. repair a damaged stone</li> </ul>
<b>Multitasking</b>	PC15. work on variety of bruting and coning machines using a different technology
<b>Knowledge and Understanding (K)</b>	

**G&J/N4503**

**Brute and cone the diamond with brutng machine**

<p><b>A. Organizational Context</b></p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. Company’s policies on: acceptable limits of weight loss; incentives; delivery standards; safety practices and hazards; security and performance measurement</p> <p>KA2. Non–disclosure of “confidential information” provided by the company either orally or in writing marked as confidential</p> <p>KA3. Liability arising out of loss, theft, or inadvertent disclosure of confidential information</p> <p>KA4. Work flow involved in company’s diamond processing process</p> <p>KA5. Importance of the individual’s role in the workflow</p> <p>KA6. Reporting structure</p> <p>KA7. Issue return procedures followed by the company</p> <p>KA8. Typical customer profile and market trends</p> <p>KA9. Specialization area of the company (size, clarity, shape, quality, etc. of diamonds)</p> <p>KA10. Diamond processing objective of the company, e.g. maximizing yield, maximizing clarity, etc.</p>
<p><b>B. Technical Knowledge</b></p>	<p>KB1. Bruting and coning methods</p> <p>KB2. Shape, cut, clarity, carat, and physical characteristics of the diamond</p> <p>KB3. Alignments for different bruting and coning of a diamond</p> <p>KB4. Potential steps which may cause damage to a diamond</p> <p>KB5. Potential work hazards, particularly, when using bruting machine</p> <p>KB6. Operating computer and bruting and coning machine</p> <p>KB7. Using the marking machine</p> <p>KB8. Polishing process</p> <p>KB9. Use of various scopes in diamond processing</p> <p>KB10. Geometry to understand the angles and symmetry</p> <p>KB11. Repair work</p> <p>KB12. Uses of different types of tools and materials for different purposes</p> <p>KB13. Maintenance and preparation of tools as per job requirement</p>
<p><b>Skills (S) [Optional]</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/individual on the job needs to know and understand how:</p> <p>SA1. To enter data on the computer</p> <p>SA2. To document work done for status and performance appraisal</p> <p><b>Reading Skills</b></p> <p>SA3. To read descriptions on the job packets/ bags</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>SA4. To discuss task, schedules, and work-loads with co-workers and supervisor’s</p> <p>SA5. To understand instructions and report problems</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p>

**G&J/N4503**

**Brute and cone the diamond with bruting machine**

	SB1. To decide for a particular rough, if girdling is possible on the marking provided
	SB2. To determine from where to begin bruting in order to minimize weight loss
	SB3. To handle diamonds with care
	<b>Plan and Organize</b>
	SB4. To plan work for maximum productivity
	<b>Customer Centricity</b>
	N.A.
	<b>Problem Solving</b>
	SB5. To rectify defects occurred
	<b>Analytical Thinking</b>
	SB6. To minimize damage or loss of any diamond during the bruting process
	SB7. To suggest improvements in order to reduce loss
SB8. To brut in order to yield maximum value for the finished diamond, where no design is provided	
<b>Critical Thinking</b>	
SB9. To spot process disruptions and delays	



**G&J/N4503**

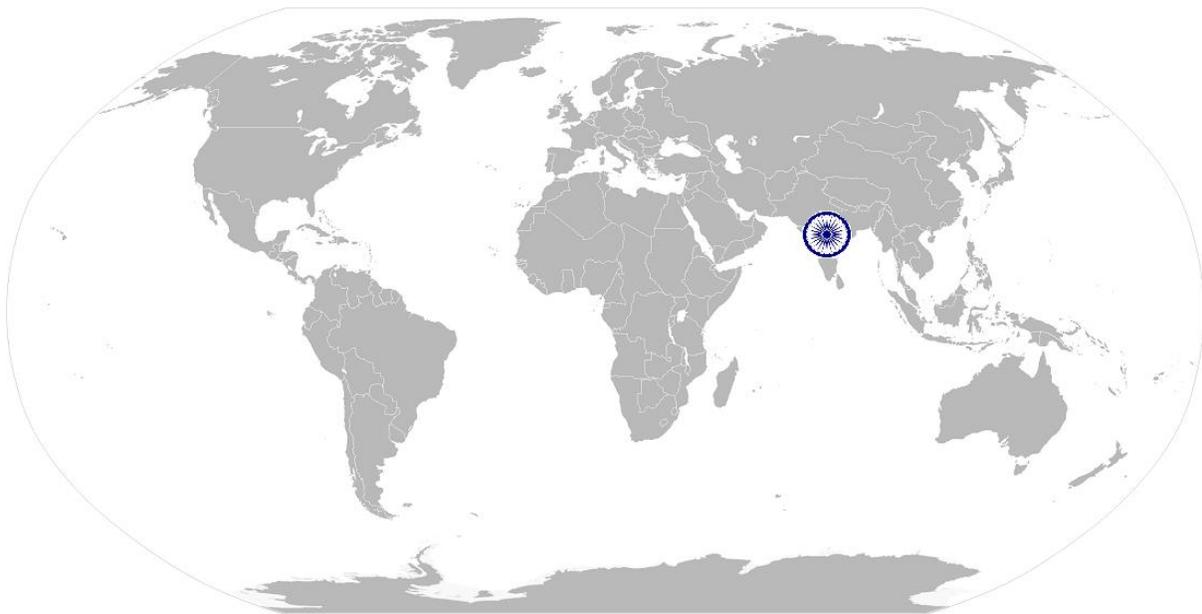
**Brute and cone the diamond with brutng machine**

## **NOS Version Control**

<b>NOS Code</b>	<b>G&amp;J/N4503</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Gems &amp; Jewellery</b>	<b>Drafted on</b>	<b>28/08/2016</b>
<b>Industry Sub-sector</b>	<b>Diamond Processing</b>	<b>Last reviewed on</b>	<b>10/11/2017</b>
<b>Occupation</b>	<b>Bruting and Coning</b>	<b>Next review date</b>	<b>10/11/2021</b>



# National Occupational Standard



## Overview

**This unit is about team work and communication with colleagues or clients. It determines the coordination capability of an individual to work as a team member, share work and multi-task in order to achieve the deliverables on schedule.**

**G&J/N9901**

**Coordinate with others**

<b>Unit Code</b>	<b>G&amp;J/N9901</b>
<b>Unit Title (Task)</b>	<b>Coordinate with others</b>
<b>Description</b>	This OS unit is about communicating with colleagues, seniors and outside parties in order to achieve the deliverables on schedule
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Interacting with supervisor</li> <li>• Interacting with colleagues within and outside the department</li> <li>• Interacting with outside parties</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Interacting with supervisor</b>	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. coordinate for receiving work instructions and raw materials from reporting supervisor</li> <li>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</li> <li>PC3. communicate to reporting supervisor about operation details and hazards</li> <li>PC4. interact with supervisor regarding compliance of company policy and rules</li> </ul>
<b>Interacting with colleagues within and outside the department</b>	<ul style="list-style-type: none"> <li>PC5. coordinate with colleagues to share work, as per the workload</li> <li>PC6. communicate and discuss work flow related difficulties in order to find solutions with mutual agreement</li> <li>PC7. coordinate and receive feedback from quality control department</li> <li>PC8. coordinate for putting team goals over individual goals</li> <li>PC9. resolve conflicts by communicating with colleagues and other departments</li> <li>PC10. coordinate with colleagues regarding multitasking in other departments with requirements</li> </ul>
<b>Interacting with outside parties</b>	PC11. adhere to nondisclosure policy of the company in all outside coordination
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b>	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. Company's policies on: preferred language of communication, reporting and escalation policy, quality delivery standards, and personnel management</li> <li>KA2. Company's policies on non-disclosure of "confidential information" provided by the company either orally or in writing marked as confidential</li> <li>KA3. Liability arising out of loss, theft, or inadvertent disclosure of confidential information</li> <li>KA4. Reporting structure</li> </ul>

**G&J/N9901**

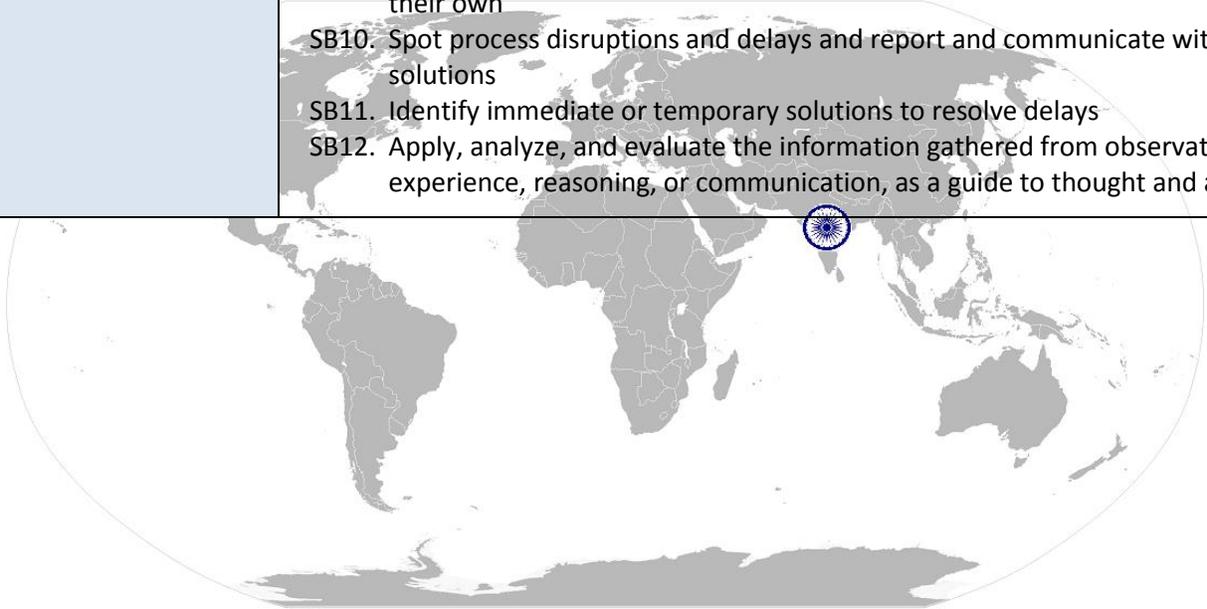
**Coordinate with others**

<p><b>B. Technical Knowledge</b></p>	<p>KB1. Various categories of people that one is required to communicate and coordinate within the organization</p> <p>KB2. Importance of effective communication in the workplace</p> <p>KB3. Importance of teamwork in organization and individual success</p> <p>KB4. Various components of effective communication</p> <p>KB5. Key elements of active listening</p> <p>KB6. Barriers to effective communication</p> <p>KB7. Importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB8. Common reasons for interpersonal conflict</p> <p>KB9. Expressing and addressing grievances appropriately and effectively</p> <p>KB10. What constitutes disciplined behavior for a working professional</p>
<p><b>Skills (S) [Optional]</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Write instructions, remarks, job sheets, basic information, technical details etc. in preferred local language of communication and English</p> <p><b>Reading Skills</b></p> <p>SA2. Read preferred language of communication as prescribed by the company</p> <p>SA3. Read job sheets and interpret technical details mentioned in the job sheet</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>SA4. Discuss task lists, schedules, and work-loads with co-workers</p> <p>SA5. Be a good listener</p> <p>SA6. Be effective in communicating the issues faced to the supervisor</p> <p>SA7. Avoid using jargon, slang or acronyms when communicating</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p> <p>SB1. Spot and communicate potential areas of disruptions to work process and report the same</p> <p>SB2. Report to supervisor and or to deal with a colleague individually, depending on the type of concern</p> <p><b>Plan and Organize</b></p> <p>SB3. Collate information and communicate in a manner that is clear and comprehensive to colleagues and supervisor</p> <p><b>Customer Centricity</b></p> <p>SB4. Convey accurate information to all internal as well as external customers (or right information to right person)</p>

**G&J/N9901**

**Coordinate with others**

	<b>Problem Solving</b>
	SB5. How to handle critical situations caused due to communication issues at workplace and solve problems without blaming others
	<b>Analytical Thinking</b>
	SB6. Analyse the work processes by interacting with others and adopting best practices
	SB7. Use prior experience to observe and reflect for development of ideas
	<b>Critical Thinking</b>
	SB8. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
	SB9. Deal with clients lacking the technical background to solve the problem on their own
	SB10. Spot process disruptions and delays and report and communicate with solutions
	SB11. Identify immediate or temporary solutions to resolve delays
	SB12. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action



**G&J/N9901**

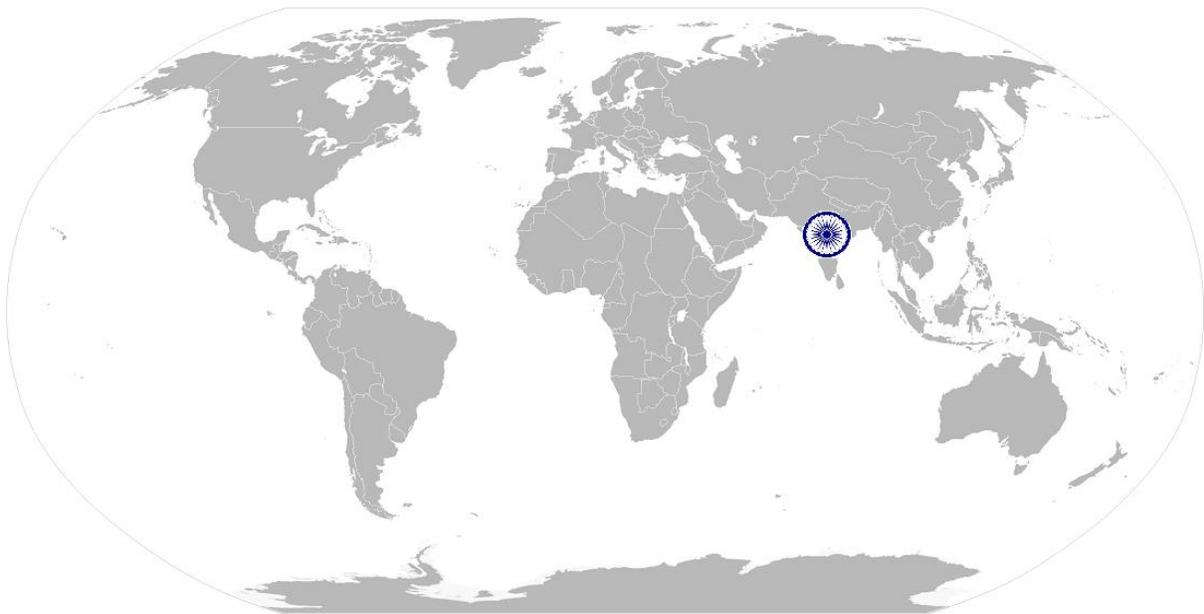
**Coordinate with others**

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# National Occupational Standard



## Overview

This unit is about commitment towards reporting potential hazards, taking preventive measures to avoid accidents in order to make the work environment safe for self and colleagues and also helps in maintaining health and safety.

**G&J/N9902**

**Maintain health and safety at workplace**

<b>Unit Code</b>	<b>G&amp;J/N9902</b>
<b>Unit Title (Task)</b>	<b>Maintain health and safety at workplace</b>
<b>Description</b>	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
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Health and safety in work area</li> <li>• Fire safety</li> <li>• Emergencies, rescue and first aid procedures</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Health and safety in work area</b>	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. identify and use appropriate protective clothing/equipment for specific tasks and work</li> <li>PC2. identify hazardous job activities in his/her job and communicate the possible causes of risks or accidents in the workplace</li> <li>PC3. carry out safe working practices while dealing with hazards to ensure safety of self and others</li> <li>PC4. identify and avoid doing any tasks or activities in a bad working position</li> <li>PC5. practice appropriate working postures to minimise occupational health related issues</li> </ul>
<b>Fire safety</b>	<ul style="list-style-type: none"> <li>PC6. use the appropriate fire extinguishers on different types of fire</li> <li>PC7. demonstrate rescue techniques applied during fire hazard</li> <li>PC8. demonstrate good housekeeping in order to prevent fire hazards</li> <li>PC9. demonstrate the correct use of any fire extinguisher</li> </ul>
<b>Emergencies, rescue and first aid procedures</b>	<ul style="list-style-type: none"> <li>PC10. administer appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.</li> <li>PC11. respond promptly and appropriately to an accident situation or medical emergency</li> <li>PC12. participate in emergency procedures such as raising alarm, safe evacuation, correct means of escape, correct assembly point etc.</li> </ul>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b>	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. Company's policies on: safety and hazards and personnel management</li> <li>KA2. Names and location of documents that refer to health and safety in work place</li> <li>KA3. Reporting structure</li> </ul>

**G&J/N9902**

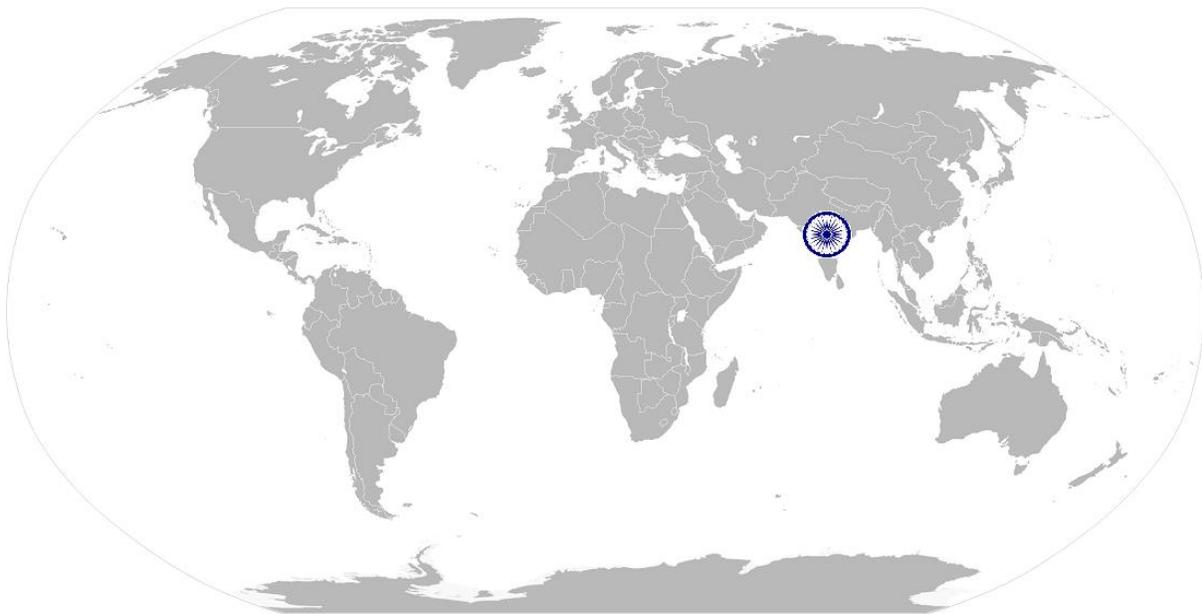
**Maintain health and safety at workplace**

<p><b>B. Technical Knowledge</b></p>	<p>KB1. Meaning of “hazard’s” and risks          KB2. Health and safety hazards commonly present in the work place and related precautions          KB3. Various dangers associate with use of electrical equipment          KB4. Preventative and remedial actions to be taken in case of exposure to toxic material          KB5. Methods of accident prevention          KB6. How different chemicals react and what could be the danger from them          KB7. How to use machines and tools without suffering bodily harm          KB8. Importance of using protective clothing/ equipment while working          KB9. Precautionary activities to prevent the fire accident          KB10. Various causes of fire          KB11. Techniques of using different fire extinguishers          KB12. Different material s materials used for extinguishing fire          KB13. Rescue techniques applied during a fire hazard          KB14. Various types of safety signs and what they mean          KB15. Appropriate basic first aid treatment relevant to condition e.g. bleeding minor burns eye injuries          KB16. Potential impact to a person who is moved incorrectly</p>
<p><b>Skills (S) [Optional]</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The individual on the job needs to know and understand how to:          N.A.</p> <p><b>Reading Skills</b></p> <p>SA1. Read and comprehend basic content to read labels, charts, signage’s          SA2. Read and comprehend basic English to read manuals of operations</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>SA3. Effectively communicate the risk</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p> <p>SB1. Report potential sources of danger          SB2. Follow the relevant prescribed procedure in the event of an accident          SB3. Wear appropriate safety gear to avoid an accident</p> <p><b>Plan and Organize</b></p> <p>SB4. Learn from past mistakes regarding use of hazardous machines or chemicals</p> <p><b>Customer Centricity</b></p> <p>N. A.</p>

**G&J/N9902**

**Maintain health and safety at workplace**

	<b>Problem Solving</b>
	SB5. Adhere to and guide others to follow prescribed procedures related to health and safety
	<b>Analytical Thinking</b>
	SB6. Analyse untoward incidents from the past and implement correct use of machines, tools or hazardous chemicals
	<b>Critical Thinking</b>
	SB7. Critically analyse the processes carried out by self and by colleagues in the department to spot potential hazards and safety issues



**G&J/N9902**

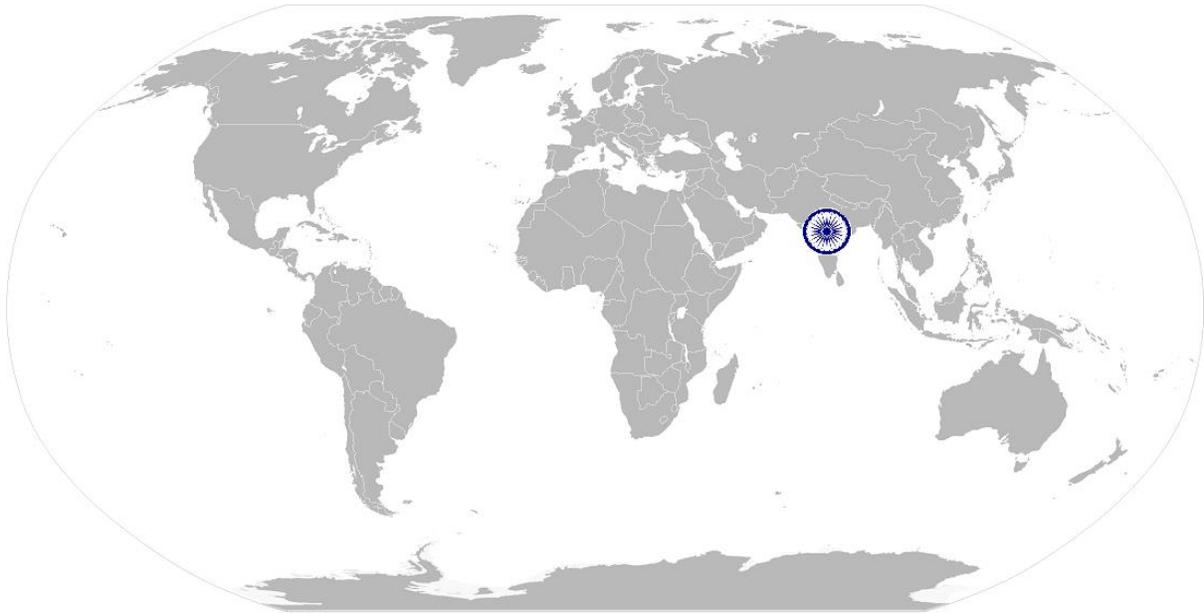
**Maintain health and safety at workplace**

## **NOS Version Control**

<b>NOS Code</b>	<b>G&amp;J/N9902</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Gems &amp; Jewellery</b>	<b>Drafted on</b>	<b>28/08/2016</b>
<b>Industry Sub-sector</b>	<b>Diamond Processing</b>	<b>Last reviewed on</b>	<b>10/11/2017</b>
<b>Occupation</b>	<b>Bruting and Coning</b>	<b>Next review date</b>	<b>10/11/2021</b>



# National Occupational Standard



## Overview

This unit is about giving the diamond its basic round and conical shape by using the laser machine in which the doped diamond is placed on a platform, aligned and cut using a laser beam. The objective is to ensure that a perfectly round girdle is formed and the pavilion and crown is coned, while maximizing yield as per planned dimensions.

**G&J/N4504**

**Brute and cone the diamond with laser machine**

<b>Unit Code</b>	<b>G&amp;J/N4504</b>
<b>Unit Title (Task)</b>	<b>Brute and cone the diamond with laser machine</b>
<b>Description</b>	This OS unit is about giving the basic round and conical shape to the rough diamond in the proportion and symmetry as per the planning or the objective fixed by the company.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Operating the laser coning machine</li> <li>• Maintaining the quality of bruting</li> <li>• Ensuring productivity</li> <li>• Controlling defects</li> <li>• Following safety procedures at work</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Operating the laser coning machine</b>	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> <li>PC1. calibrate laser bruting machine using calibration pot</li> <li>PC2. to ensure the dop is placed with the machine holders with accurately</li> <li>PC3. to ensure the dimensions of the rough are properly reflected in the computer program</li> <li>PC4. to be able to align the diameter, table and girdle marking of the diamond with the help of computer screen</li> <li>PC5. to monitor the process on screen while machine does bruting</li> <li>PC6. check the bruted diamond for the given specifications</li> </ul>
<b>Maintaining the quality of bruting</b>	<ul style="list-style-type: none"> <li>PC7. create a perfectly round girdle</li> <li>PC8. carry out bruting and coning of the roughs as per requirement</li> <li>PC9. label and bag the bruted diamonds before returning</li> </ul>
<b>Ensuring productivity</b>	<ul style="list-style-type: none"> <li>PC10. achieve the productivity in terms of carats or number of pieces as set by the company</li> <li>PC11. achieve timely delivery for further processing</li> <li>PC12. maintain cycle time</li> </ul>
<b>Controlling defects</b>	<ul style="list-style-type: none"> <li>PC13. to ensure, diamond is not damaged while girdle marking</li> <li>PC14. minimize damage, weight loss and breakage</li> <li>PC15. repair a damaged stone</li> </ul>
<b>Following safety procedures at work</b>	<ul style="list-style-type: none"> <li>PC16. ensure that the door of the laser machine is closed before starting the machine</li> <li>PC17. follow exact machine operating procedures provided by manufacturer while performing bruting operations</li> <li>PC18. wear proper safety equipment such as eye glasses while working</li> </ul>

**G&J/N4504**

**Brute and cone the diamond with laser machine**

Knowledge and Understanding (K)	
<b>A. Organizational Context</b>	<p>The individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> <li>KA1. Company’s policies on: acceptable limits of weight loss; incentives; delivery standards; safety practices and hazards; security and performance measurement</li> <li>KA2. Non–disclosure of “confidential information” provided by the company either orally or in writing marked as confidential</li> <li>KA3. Liability arising out of loss, theft, or inadvertent disclosure of confidential information</li> <li>KA4. Work flow involved in company’s diamond processing process</li> <li>KA5. Importance of the individual’s role in the workflow</li> <li>KA6. Reporting structure</li> <li>KA7. Issue return procedures followed by the company</li> <li>KA8. Typical customer profile and market trends</li> <li>KA9. Specialization area of the company (size, clarity, shape, quality, etc. of diamonds)</li> <li>KA10. Diamond processing objective of the company, e.g. maximizing yield, maximizing clarity, etc.</li> </ul>
<b>B. Technical Knowledge</b>	<ul style="list-style-type: none"> <li>KB1. Bruting and coning methods</li> <li>KB2. Shape, cut, clarity, carat, and physical characteristics of the diamond</li> <li>KB3. Alignments for different bruting and coning of a diamond</li> <li>KB4. Potential steps which may cause damage to a diamond</li> <li>KB5. Potential work hazards, particularly, when using bruting machine</li> <li>KB6. Operating computer and bruting and coning machine</li> <li>KB7. Using the marking machine</li> <li>KB8. Polishing process</li> <li>KB9. Use of various scopes in diamond processing</li> <li>KB10. Geometry to understand the angles and symmetry</li> <li>KB11. Repair work</li> <li>KB12. Uses of different types of tools and materials for different purposes</li> <li>KB13. Maintenance and preparation of tools as per job requirement</li> <li>KB14. Heat requirements such temperature, duration for different adhesives</li> <li>KB15. Potential work hazards</li> <li>KB16. Use of magnifying camera with screen or an eye glass in order to check alignment</li> </ul>
Skills (S) [Optional]	
<b>A. Core Skills/ Generic Skills</b>	<p><b>Writing Skills</b></p>
	<p>The user/individual on the job needs to know and understand how:</p> <ul style="list-style-type: none"> <li>SA1. To enter data on the computer</li> <li>SA2. To document work done for status and performance appraisal</li> </ul>

**G&J/N4504**

**Brute and cone the diamond with laser machine**

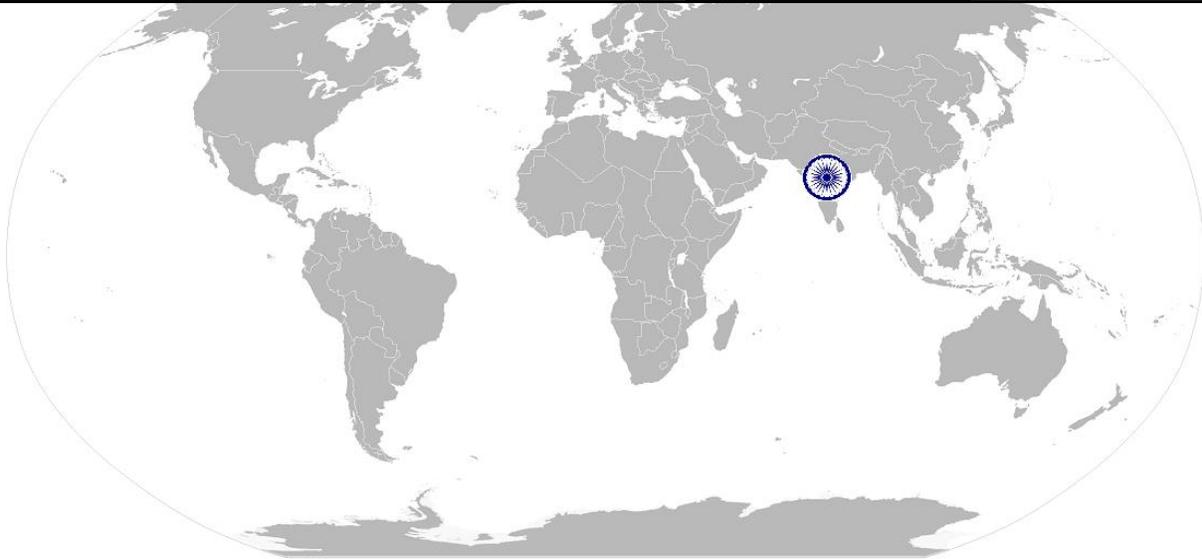
	<b>Reading Skills</b>
	SA3. To read descriptions on the job packets/ bags SA4. To read manual and work instruction related to operations of laser bruting machine
	<b>Oral Communication (Listening and Speaking skills)</b>
	SA5. To discuss task, schedules, and work-loads with co-workers and supervisors SA6. To understand instructions and report problems
	<b>B. Professional Skills</b>
	<b>Decision Making</b>
SB1. To decide for a particular rough, if girdling is possible on the marking provided SB2. To determine from where to begin bruting in order to minimize weight loss	
<b>Plan and Organize</b>	
SB3. To plan work for maximum productivity	
<b>Customer Centricity</b>	
N.A.	
<b>Problem Solving</b>	
SB4. To rectify defects occurred	
<b>Analytical Thinking</b>	
SB5. To minimize damage or loss of any diamond during the bruting process SB6. To suggest improvements in order to reduce loss SB7. To brut in order to yield maximum value for the finished diamond, where no design is provided	
<b>Critical Thinking</b>	
SB8. To spot process disruptions and delays	

**G&J/N4504**

**Brute and cone the diamond with laser machine**

## NOS Version Control

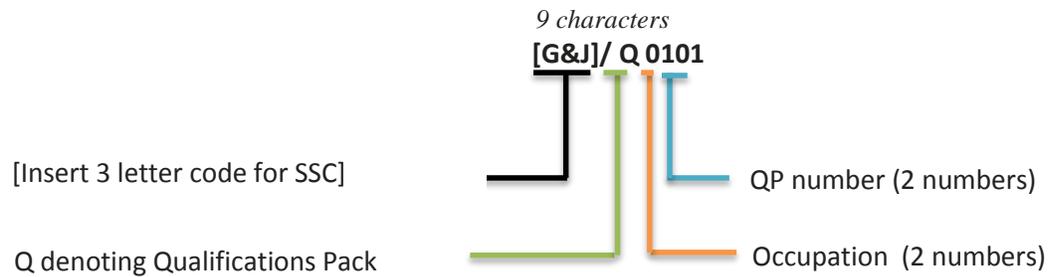
<b>NOS Code</b>	<b>G&amp;J/N4504</b>		
<b>Credits (NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Industry</b>	<b>Gems &amp; Jewellery</b>	<b>Drafted on</b>	<b>28/08/2016</b>
<b>Industry Sub-sector</b>	<b>Diamond Processing</b>	<b>Last reviewed on</b>	<b>10/11/2017</b>
<b>Occupation</b>	<b>Bruting and Coning</b>	<b>Next review date</b>	<b>10/11/2021</b>



## Annexure

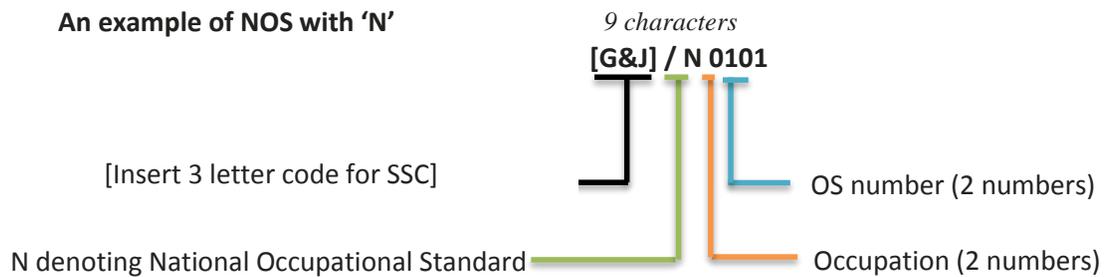
### Nomenclature for QP and NOS

#### Qualifications Pack



#### Occupational Standard

##### An example of NOS with 'N'



The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Handmade gold and gems-set jewellery	01-11
Imitation Jewellery	12-20
Cast and diamond-set jewellery	21-40
Diamond processing	41-60
Gemstone processing	61-80
Jewellery retailing	81-90
Silver Smithing	91-98
Common	99

Sequence	Description	Example
Three letters	Industry name	G&J
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

## Criteria For Assessment Of Trainees

**Job Role** Bruter – Diamond Processing

**Qualification Pack** G&J/Q4505

**Sector Skill Council** Gem & Jewellery

### 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. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 50% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS				Marks Allocation	
Total Marks: 150				Theory	Skills Practical
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
1. G&J/N4501 Fix the diamond for Bruting	PC1. compare the specifications of the roughs such as shape, size and quantity, as per those mentioned on the rough diamond packet issued by supervisor	<b>20</b>	2	1	1
	PC2. select the correct dop for the size of the rough to be bruted		3	0	3
	PC3 fix rough as per the bruting required using adhesive either prescribed by company or recommended by machine manufacturer, with accuracy		3	0	3
	PC4. to align and level the rough on the dop accurately		2	1	1
	PC5. achieve the productivity in terms of carats or number of pieces as set by the company		1	0	1

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
	PC6. ensure delivery for further processing is not delayed		2	1	1
	PC7. ensure no damage to the rough during fixing process		2	1	1
	PC8. report mismatch in rough issued and received		1	0	1
	PC9. report unclear marking and report		1	0	1
	PC10. report defective or inadequate number of dops/ pots		1	0	1
	PC11. report inadequate quantity of consumable such as adhesives		1	0	1
	PC12. report machine break down or wear and tear of tools, etc.		1	0	1
	<b>Total</b>		<b>20</b>	<b>4</b>	<b>16</b>

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
2. G&J/N4503 Brute and cone the diamond with bruting Machine	PC1. ensure the dop is placed in the machine holder with precision		5	2	3
	PC2 align the bruting line with the marking of the diamond with accurately to achieve proper cut		7	2	5
	PC3 enter the parameters, such as dimensions in the computer	<b>90</b>	5	2	3
	PC4. ensure the angle of the diamond or the wheel for coning process is precisely done		5	2	3
	PC5. steady control of the lever for the to- and-fro bruting and coning process		9	2	7

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
	PC6. create a perfectly round girdle		5	2	3
	PC7. carry out bruting and coning of the roughs as prescribed		15	2	13
	PC8. label and bag the bruted diamonds before returning		3	1	2
	PC9. achieve the productivity in terms of carats or number of pieces as set by the company		5	1	4
	PC10. achieve timely delivery for further processing		3	1	2
	PC11. maintain cycle time		2	0	2
	PC12. ensure diamond is not damaged while girdle marking		8	1	7
	PC13. minimize damage, weight loss and breakage		5	1	4
	PC14. repair a damaged stone		10	1	9
	PC15. work on variety of bruting and coning machines using a different technic		3	0	3
	<b>Total</b>		<b>90</b>	<b>20</b>	<b>70</b>

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
3. G&J/N9901 Coordinate with others	PC1.coordinate for receiving work instructions and raw materials from reporting supervisor		1	0	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	<b>20</b>	1	0	1

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
	PC3. communicate to reporting supervisor about operation details and hazards		1	0	1
	PC4. interact with supervisor regarding compliance of company policy and rules		2	0	2
	PC5.coordinate with colleagues to share work, as per the workload		3	0	3
	PC6.communicate and discuss work flow related difficulties in order to find solutions with mutual agreement		2	0	2
	PC7. coordinate and receive feedback from quality control department		2	1	1
	PC8.coordinate for putting team goals over individual goals		1	0	1
	PC9.resolve conflicts by communicating with colleagues and other departments		2	0	2
	PC10. coordinate with colleagues regarding multitasking in other departments with requirements		3	1	2
	PC11. adhere to nondisclosure policy of the company in all outside coordination		2	1	1
	<b>Total</b>		<b>20</b>	<b>3</b>	<b>17</b>

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
4. G&J/N9902 Maintain health and safety at workplace	PC1. identify and use appropriate protective clothing/equipment for specific tasks and work	<b>20</b>	2	0	2

Compulsory NOS				Marks Allocation	
Total Marks: 150					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out Of	Theory	Skills Practical
	PC2. identify hazardous job activities in his/her job and communicate the possible causes of risks or accidents in the workplace		1	0	1
	PC3. carry out safe working practices while dealing with hazards to ensure safety of self and others		1	0	1
	PC4. identify and avoid doing any tasks or activities in a bad working position		2	0	2
	PC5. practice appropriate working postures to minimise occupational health related issues		2	1	1
	PC6. use the appropriate fire extinguishers on different types of fire.		1	0	1
	PC7. demonstrate rescue techniques applied during fire hazard		2	0	2
	PC8. demonstrate good housekeeping in order to prevent fire hazards		1	0	1
	PC9. demonstrate the correct use of any fire extinguisher		2	0	2
	PC10. administer appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.		1	0	1
	PC11. respond promptly and appropriately to an accident situation or medical emergency		3	1	2
	PC12. participate in emergency procedures such as raising alarm, safe evacuation, correct means of escape, correct assembly point etc.		2	1	1
	<b>Total</b>		<b>20</b>	<b>3</b>	<b>17</b>

OPTIONS					
Option 1. Laser Bruter				Marks Allocation	
Total Marks: 90				Theory	Skills Practical
Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Out Of	Theory	Skills Practical
1.1 G&J/N4504 Brute and cone the diamond with laser machine	PC1. calibrate laser bruting machine using calibration pot	<b>90</b>	7	2	5
	PC2. to ensure the dop is placed with the machine holders with accurately		5	1	4
	PC3. to ensure the dimensions of the roughare properly reflected in the computer program		10	2	8
	PC4. to be able to align the diameter, table and girdle marking of the diamond with the help of computer screen		10	2	8
	PC5. to monitor the process on screen while machine does bruting		5	2	3
	PC6. check the bruted diamond for the given specifications		5	1	4
	PC7. create a perfectly round girdle		7	2	5
	PC8. carry out bruting and coning of the roughs as per requirement		10	2	8
	PC9. label and bag the bruted diamonds before returning		5	2	3
	PC10. achieve the productivity in terms of carats or number of pieces as set by the company		5	2	3
	PC11. achieve timely delivery for further processing		4	2	2
	PC12. maintain cycle time		2	0	2
	PC13 to ensure, diamond is not damaged while girdle marking		5	0	5
	PC14. minimize damage, weight loss and breakage		2	0	2
	PC15. repair a damaged stone		5	0	5

	PC16. ensure that the door of the laser machine is closed before starting the machine		1	0	1
	PC17. follow exact machine operating procedures provided by manufacturer while performing bruting operations		1	0	1
	PC18. wear proper safety equipment such as eye glasses while working		1	0	1
	<b>Total</b>		<b>90</b>	<b>20</b>	<b>70</b>