

## 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 - Jack Hammer Operator

**SECTOR:** MINING

**SUB-SECTOR:** Mining Operations

**OCCUPATION:** Drilling and Cutting

**REFERENCE ID:** MIN /Q0212

**ALIGNED TO:** NCO-2015/8111.0100

**Brief Job Description:** Jack hammers' common application is development of benches in open pit mine. The jack hammer is in regular use in Underground mines face development. The jack hammer operator is responsible for all aspects of the operation and monitoring the work of the support group.

**Personal Attributes:** He needs to be physically fit and strong and not suffer from dust allergy or chest diseases or asthmatic problem. This job requires the individual to be knowledgeable, careful, and diligent. He needs to have ability to work cohesively within own work group and others.

Job Details	Qualifications Pack Code	MIN/Q0212		
	Job Role	Jack Hammer Operator		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Mining	Drafted on	08/08/2016
	Sub-sector	Mining Operations	Last reviewed on	27/09/2016
	Occupation	Drilling & Cutting	Next review date	26/09/2019
	NSQC Clearance on	DD/MM/YYYY		

Definitions	Job Role	Jack Hammer Operator
	Role Description	The Operator drives and controls a jack hammer machine to break up rocks, concretes or mines surfaces. Directs and facilitates scaling of loose rocks and mucking of broken ore or waste rock from the worksite.
	NSQF level	4
	Minimum Educational Qualifications	Class X
	Maximum Educational Qualifications	Diploma in Mining
	Training (Suggested but not mandatory)	<ol style="list-style-type: none"> <li>OEM training on difference type of Jack Hammers and their mounting, usage guidelines and operating parameters.</li> <li>Training on Jack Hammer machine service requirement, critical assemblies and sub-assemblies, common equipment failure.</li> </ol>
	Minimum Job Entry Age	18 years.
	Experience	In lieu of minimum qualification, the incumbent should have 3 years of experience in Operating Jack hammer in mine environment.
Applicable National Occupational Standards (NOS)	<p><b>Compulsory:</b></p> <ol style="list-style-type: none"> <li><a href="#">MIN/N0241: Pre-operation checks and operation of the Jack Hammer.</a></li> <li><a href="#">MIN/N0242: Routine maintenance and troubleshooting.</a></li> <li><a href="#">MIN/N0901: Comply with Workplace Health and Safety</a></li> </ol> <p><b>Optional:</b> N.A.</p>	
Performance Criteria	As described in the relevant OS units	

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job Role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
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.
NOS	NOS are Occupational Standards which apply uniquely in the Indian context.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification 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.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills or Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

**Acronyms**

Keywords/Terms	Description
SCMS	Skill Council for Mining Sector
NOS	National Occupational Standards
NSQF	National Skill Qualification Framework
NVEQF	National Vocational Educational Qualification Framework
NVQF	National Vocational Qualification Framework
OS	Occupational Standard
PC	Performance Criteria
QP	Qualification Pack
SSC	Sector Skill Council
HEMM	Heavy Earth Moving Machinery
OEM	Original Equipment Manufacturer
DGMS	Director General of Mines safety

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# National Occupational Standard



## Overview

This unit provides performance criteria, knowledge and understanding and skill and ability for activities that need to be carried out to inspect the Jack Hammer before operation and safe and productive usage of the Jack Hammer for desired output

MIN/N0241

**Pre-operation check and Operation of Jack Hammer**

National Occupational Standard	<b>Unit Code</b>	MIN/N 0241
	<b>Unit Title (Task)</b>	Pre-operation check and Operation of Jack Hammer
	<b>Description</b>	This OS is about pre-operation check and ongoing operation of Jack Hammer.
	<b>Scope</b>	Tasks associated with the operation of a jackhammer would include: <ul style="list-style-type: none"> <li>• Routine check before machines operation.</li> <li>• Operation of the Jack hammer</li> </ul>
	<b>Performance Criteria(PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Routine check before machines operation</b>	To be competent, the user/individual on the job must be able to - <ul style="list-style-type: none"> <li>PC1. Understand the shift / day's production plan and schedule from Foreman / Mine sardar / site engineer.</li> <li>PC2. Understand site information and receive idea about type of rock to be encountered / stability etc.</li> <li>PC3. Plan for right air flush or wet flush drilling, type of tool and mounting required.</li> <li>PC4. Choose the proper weight of the jackhammer for the job.</li> <li>PC5. carry out pre-operational inspection of jackhammer to ensure machine is in good order and all guards, handles and safety mechanisms are fitted and operational;</li> <li>PC6. Inspect electrical cable and junction points to determine whether the cable and plug is in good order or needs replacing; Check whether the electrical lead is connected to an approved safety switch.</li> <li>PC7. Check pneumatic connection and hose joints for Pneumatic Jack hammers.</li> <li>PC8. Inspect whether right type of chisel bit is fitted and whether the bit/point is in good order or needs replacing.</li> <li>PC9. Check whether scaling of loose rocks have been done and the area is safe for operation.</li> <li>PC10. Overseeing the support group for bolting, resincing plate tightening etc.</li> </ul>
	<b>Operation of the Jack hammer</b>	<ul style="list-style-type: none"> <li>PC11. Check and as and when required, to ensure proper scaling/dressing of loose rocks from the roof and wall of the worksite.</li> <li>PC12. Ensure cleaning of the drill site.</li> <li>PC13. Operate the Jack Hammer as per production plan and schedule.</li> <li>PC14. Periodically check chisel bits for spending need and other operating parameters etc.</li> <li>PC15. Shut off the air supply and relieve pressure from the supply hose before changing tool points. Do the same when leaving the jackhammer unattended.</li> <li>PC16. Ensure all machine consumables and spares (chisel bits / compressed air / couplings/ rods etc) are used to their maximum potential.</li> <li>PC17. Reduce downtime and wastage.</li> <li>PC18. Check and ensure ongoing proper ventilation of the worksite for UG mines.</li> </ul>
	<b>Knowledge and Understanding (K)</b>	
	<b>A. Organizational Context</b>	The user/individual on the job needs to know and understand:



**MIN/N0241**

**Pre-operation check and Operation of Jack Hammer**

(Knowledge of the company / organization and its processes)	<p>KA1. The performance standard and procedure followed by the company.</p> <p>KA2. Standing orders in force at the mine. Safety in the vicinity of machinery.</p> <p>KA3. Incident Reporting and daily reporting structure in the site.</p> <p>KA4. Contact person in case of emergency.</p> <p>KA5. Process of indenting spare parts and raising requirement of consumables and parts.</p> <p>KA6. Process of storage and disposals of waste material in eco-friendly way.</p> <p>KA7. Duties of workmen under Mines act.</p> <p>KA8. Provision of wages and working hours as per Mines act.</p> <p>KA9. Knowledge of mining safety procedures.</p> <p>KA10. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Knowledge about the different types of jackhammer: Pneumatic, Electro mechanical or electro pneumatic, Hydraulic. Type of stand and mounting rigs and their operating principle like Percussive, Rotary Percussive etc.</p> <p>KB2. Knowledge about the machines i.e. it is components, assemblies and accessories.</p> <p>KB3. Knowledge about compressor, storage and compressed air, pipeline for transmission and assembly of pipes.</p> <p>KB4. How to remove and fit handles, mount on the carriage, replace chisels to the body of the jackhammer.</p> <p>KB5. Know how to troubleshoots and maintain the jackhammer.</p> <p>KB6. Hazardous manual tasks and ergonomic issues associated with the operation of a jackhammer.</p>
<b>Skills (S)</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Should be able to fill the respective checklist.</p> <p>SA2. Should be able to observe the problem in equipment and report it to supervisor.</p> <p>SA3. Write requisition to internal customer on the requirement of tools, gauges etc</p>
	<b>Reading Skills</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Read the instructions given in the checklist</p> <p>SA5. Read the production plan, components and spares names and nomenclature as per OEM Manuals.</p> <p>SA6. Read the log books and any problem reported by coworkers</p> <p>SA7. Read the risk management plan of the job.</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA8. Discuss repetitive issue in any particular equipment with supervisor</p> <p>SA9. Discuss task list, schedules and workload with the co-worker</p> <p>SA10. Question internal customer/supervisor appropriately in order to understand the nature of the problem.</p>

MIN/N0241

**Pre-operation check and Operation of Jack Hammer**

<b>B. Professional Skills</b>	<b>Decision Making</b>
	The user/individual on the job needs to know and understand how to: SB1. Decide when to conduct the routine maintenance. SB2. Decide on types of tools and tackles to be used.
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand: SB3. Plan work according to the schedule SB4. Plan for cleaning of the equipments
	<b>Customer Centricity</b>
	The user/individual on the job needs to know and understand how to: SB5. Provide services of the highest order to ensure customer satisfaction.
	<b>Problem Solving</b>
	The user/individual on the job needs to know and understand how to: SB6. Report problem that he can't resolve to appropriate authority. SB7. Identify sources of support that can be availed for problem solving.
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB8. Analyze repetitive issues and discuss with supervisor/mechanic
	<b>Critical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB9. Analyze, evaluate and apply the information gathered from observations and experience.



MIN/N0241

Pre-operation check and Operation of Jack Hammer

## NOS Version Control

NOS Code	MIN/N0241		
Credits (NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operations	Last reviewed on	27/09/2016
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# National Occupational Standard



## Overview

This unit is about carrying out regular inspection and checks, periodic maintenance and minor repair of the equipment in case of breakdown or as required on the basis of inspection finding or log sheet report etc.

MIN/N0242

**Routine fault repair & troubleshooting**

National Occupational Standard

<b>Unit Code</b>	<b>MIN/N 0242</b>
<b>Unit Title (Task)</b>	<b>Perform routine check, fault repair and trouble shooting on the Jackhammer.</b>
<b>Description</b>	This unit is about performing routine check, carrying out minor repair / maintenance and troubleshooting of the Jack Hammer.
<b>Scope</b>	<p>This OS unit/task covers the following:</p> <ul style="list-style-type: none"> <li>• Routine inspection and periodic maintenance</li> <li>• Repairing the fault / breakdown</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Routine inspection and periodic maintenance</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Carry out preliminary &amp; visual checks. Observe any unusual noise, crack, vibration, leak, spillage, accumulation etc. on the Jack Hammer and supply pneumatic / hydraulic /electro pneumatic system and seek corrective measures.</p> <p>PC2. To check for proper functionality of gauges, indicators, and sensor. Observe any fault message and diagnose the problem solution. Inform Technician and Fitters for any major repair.</p> <p>PC3. Track machine-operating hours to assess the right service schedule.</p> <p>PC4. Clean air filters dust bowls.</p> <p>PC5. Replace chisel bits when required.</p> <p>PC6. Check structural integrity and any crack failure of stand or support structure.</p> <p>PC7. Drain water and sediment /fuel separators. Replenish coolants, lubricants and fluids.</p> <p>PC8. Carry out required lubrication, greasing and oil change as required.</p>
<b>Repairing the fault / breakdown</b>	<p>PC9. Ensure proper Lock out and Tag out. Ensure the Jack Hammer air supply is shut off and pressure is relieved in the supply hose before changing tool points or carry out any maintenance activity.</p> <p>PC10. Ensure cleaning of the drilling site and dispose of waste material and broken parts at appropriate place.</p> <p>PC11. Check the machine parameters before restart the machine operation.</p> <p>PC12. Assess when the problem is beyond his competence and report the problem to Technicians / Site engineer.</p> <p>PC13. Update the logbook with works carried out and further works to be done.</p>
<b>Knowledge and Understanding (K)</b>	
<b>B. Organizational Context</b> (Knowledge of the company / organization and	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The organization's procedure and guidelines related to breakdown</p> <p>KA2. The performance standards and procedures followed in organization</p> <p>KA3. Reporting structure of organization</p> <p>KA4. Escalation matrix for reporting unresolved problems.</p> <p>KA5. Contact person in case of emergency.</p>

**MIN/N0242**

**Routine fault repair & troubleshooting**

its processes)	<p>KA6. Process of indenting spare parts and raising requirement of consumables and parts.</p> <p>KA7. Process of storage and disposals of waste material in eco-friendly way.</p> <p>KA8. Duties of workmen under Mines act.</p> <p>KA9. Provision of wages and working hours as per Mines act.</p> <p>KA10. Knowledge of mining safety procedures.</p> <p>KA11. Refresher training as per fourth schedule MVTR (1966) within one month of joining duties following absence from duties for a period exceeding one year.</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Knowledge about the different types of Jackhammer: Pneumatic, Electro mechanical or electro pneumatic, Hydraulic. Type of stand and mounting rigs and their operating principle like Percussive, Rotary Percussive etc.</p> <p>KB2. Knowledge about the machines i.e. it is components, assemblies and accessories.</p> <p>KB3. Knowledge about compressor, pipeline for transmission and assembly of pipes.</p> <p>KB4. How to remove and fit handles, mount on the carriage, replace chisels to the body of the jackhammer.</p> <p>KB5. Know how to troubleshoots and maintain the jackhammer.</p> <p>KB6. Tools and tackles required for minor repair and breakdown servicing.</p> <p>KB7. Hazardous manual tasks and ergonomic issues associated with the operation of a jackhammer.</p>
<b>Skills (S)</b>	
<b>C. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record any deviation/incidents as per the prescribed norms</p> <p>SA2. Note down the repairs/ breakdown attended by him for the respective shift.</p> <p>SA3. Note measurement, gauge reading, RPM etc for various process in the prescribed format</p>
	<b>Reading Skills</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Should be able to read part catalogue</p> <p>SA5. Read instructions, guideline, notice and warnings related to equipment</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. question internal customer/supervisor appropriately in order to understand the nature of the problem</p> <p>SA7. Attentively listen with full attention and comprehend the information given by speaker.</p> <p>SA8. Interact effectively with welder in order to clarify instructions and other issues.</p> <p>SA9. Should be able to alert all persons in immediate vicinity in case of any emergency.</p> <p>SA10. Use correct technical terms while communicating with welder</p>
<b>D. Professional Skills</b>	<b>Decision Making</b>

MIN/N0242

**Routine fault repair & troubleshooting**

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. Decide for preventive maintenance/repair if observed any major issue in machine.</p> <p>SB2. Take decision on use of fire extinguisher in case of fire incident</p>
	<p><b>Plan and Organize</b></p>
	<p>The user/individual on the job needs to know and understand:</p> <p>SB3. Carry out work in line with the instruction of mechanic/supervisor and as per timeline.</p> <p>SB4. Plan work according to the job location.</p>
	<p><b>Customer Centricity</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB5. Provide service of highest order to ensure customer satisfaction.</p>
	<p><b>Problem Solving</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. Report problems that you cannot resolve to appropriate authority</p> <p>SB7. Identify sources of support that can be availed for problem solving for various kinds of problems.</p>
	<p><b>Analytical Thinking</b></p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. Evaluate the complexity of the task to determine if he/she needs any assistance from the senior</p>
	<p><b>Critical Thinking</b></p>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. Analyze, evaluate and apply the information gathered from observation, experience, reasoning to act efficiently and effectively.</p>	

## NOS Version Control

NOS Code	MIN/N0242		
Credits (NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operations	Last reviewed on	27/09/2016
Occupation	Drilling & Cutting	Next review date	26/09/2019



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# National Occupational Standard



## Overview

This unit is about adhering to health and safety requirements at the worksite.



MIN/N0901

Comply with Workplace Health & Safety

National Occupational Standard

<b>Unit Code</b>	MIN/N0901
<b>Unit Title (Task)</b>	Comply with Worksite Health and Safety
<b>Description</b>	This unit provides the information regarding worksite health and safety.
<b>Scope</b>	This unit is about adhering to health and safety requirements at the worksite during equipment operations.
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Safety, Security and Administrative</b>	<p>To be competent, the user/individual on the job must be able to</p> <p>PC1. Comply with safety, health, security and environment related regulations/ guidelines at the work site.</p> <p>PC2. Use Personal Protective Equipment (PPE) and other safety gear such as seat belt, body protection, respiratory protection, eye protection, ear protection and hand protection.</p> <p>PC3. Follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk.</p> <p>PC4. Carry out operations as per the manufacturer's and worksite related health and safety guidelines.</p> <p>PC5. Handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines.</p> <p>PC6. Follow safety regulations and procedures with regard to worksite hazards and risks.</p> <p>PC7. Operate various grades of fire extinguishers, as applicable.</p> <p>PC8. Support in administering basic first aid and report to concerned team members, as required, in case of an accident.</p> <p>PC9. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility.</p> <p>PC10. Record and report details related to operations, incidents or accidents, as applicable</p> <p>PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.</p>
<b>Knowledge and Understanding (K)</b>	
<b>Regulatory Context</b> (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Benching in quarries, dressing of overhangs, undercuts, fencing.</p> <p>KA2. First aid and Hygiene.</p> <p>KA3. Code of traffic in specific areas of mine. Significance of fences.</p> <p>KA4. Standing orders in force at the mine. Safety in the vicinity of Machinery.</p> <p>KA5. Shot-firing and Safety regulations. How and where to take shelters? Knowledge of mining safety procedures.</p> <p>KA6. Outcome of violation of safety procedures.</p>

MIN/N0901

**Comply with Workplace Health & Safety**

	<p>KA7. Locally prepared Emergency Preparedness / Disaster Management Plan.</p> <p>KA8. Process for reporting any unsafe act/condition in work area which may endanger his or his colleague's life.</p> <p>KA9. Environmental impact of mining.</p> <p>KA10. Sources of dust, noise and vibration and measures to minimize.</p> <p>KA11. Hazardous material safety and security rules and regulations as prescribed by DGMS.</p>
<p><b>Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. In-depth knowledge of operation of the Jack Hammer and chipped materials flow.</p> <p>KB2. Technical and gallery training as per first schedule, Mining Vocational Training Rules (MVTR) 1966.</p> <p>KB3. Refresher training as per first schedule, Mining Vocational Training Rules (MVTR) 1966. if absent from mines for a period of One year or more before re-employment.</p>



MIN/N0901

Comply with Workplace Health & Safety

## NOS Version Control

NOS Code	MIN/Q0901		
Credits (NSQF)	TBD	Version number	1.0
Sector	Mining	Drafted on	08/08/2016
Sub-sector	Mining Operations	Last reviewed on	27/09/2016
Occupation	Drilling & Cutting	Next review date	26/09/2018

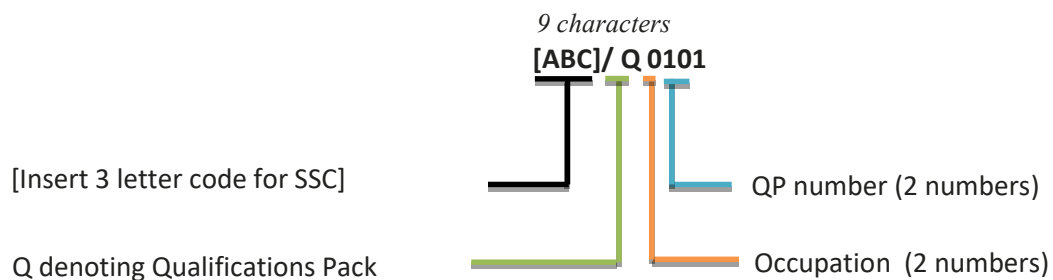


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## Annexure

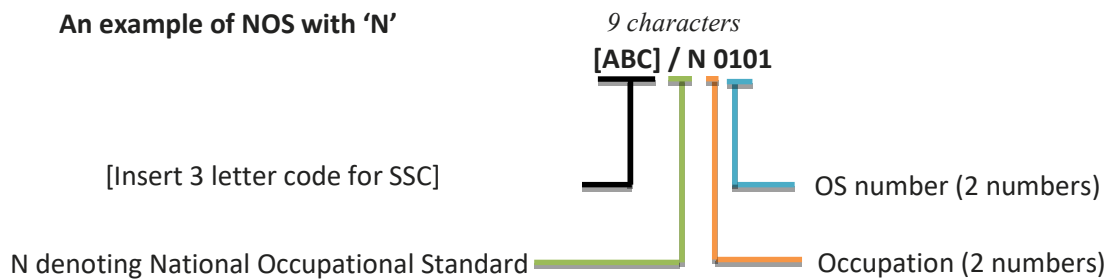
### Nomenclature for QP and NOS

#### 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
Exploration & Resource Management	01 to 50
Mining Operations	01 to 80
Engineering Services	01 to 60
Mineral Beneficiation	01 to 80

Sequence	Description	Example
Three letters	Industry name	MIN
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** Jack Hammer Operator

**Qualification Pack** MIN/Q0212

**Sector Skill Council** Mining

### 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 center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
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

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Mark	Out Of	Theory	Skills Practical
		<b>100</b>	<b>100</b>	<b>30</b>	<b>70</b>
1. MIN/N0241: Carry out pre-operation checks and operate the Jack Hammer.	PC1.Understand the shift / day's production plan and schedule from Foreman / Mine sardar / site engineer.	<b>50</b>	4	2	2
	PC2.Understand site information and receive idea about type of rock to be encountered / stability etc.		3	2	1
	PC3. Plan for right air flush or wet flush drilling, type of tool and mounting required.		3	1	2
	PC4.Choose the proper weight of the jackhammer for the job.		3	2	1
	PC5. carry out pre-operational inspection of jackhammer to ensure machine is in good order and all guards, handles and safety mechanisms are fitted and operational;		4	1	3
	PC6. Inspect electrical cable and junction points to determine whether the cable and plug is in good order or needs replacing; Check whether the electrical lead is connected to an approved safety switch.		3		3

	PC7.Check pneumatic connection and hose joints for Pneumatic Jack hammers.		3		3
	PC8.Inspect whether right type of chisel bit is fitted and whether the bit/point is in good order or needs replacing.		3		3
	PC9.Check whether scaling of loose rocks have been done and the area is safe for operation.		2	1	1
	PC10. Overseeing the support group for bolting, resincing plate tightening etc.		2	1	1
	PC11.Check and as and when required, to ensure proper scaling/dressing of loose rocks from the roof and wall of the worksite.		2		2
	PC12.Ensure cleaning of the drill site.		3		3
	PC13.Operate the Jack Hammer as per production plan and schedule.		4	2	2
	PC14.Periodically check chisel bits for spending need and other operating parameters etc.		2	1	1
	PC15.Shut off the air supply and relieve pressure from the supply hose before changing tool points. Do the same when leaving the jackhammer unattended.		2		2
	PC16.Ensure all machine consumables and spares (chisel bits / compressed air / couplings/ rods etc) are used to their maximum potential.		3	1	2
	PC17. Reduce downtime and wastage.		2	1	1
	PC18. Check and ensure ongoing proper ventilation of the worksite for UG mines.		2		2
			<b>50</b>	<b>15</b>	<b>35</b>
2. MIN/N0242: Perform routine maintenance and troubleshooting.	PC1. Carry out preliminary & visual checks. Observe any unusual noise, crack, vibration, leak, spillage, accumulation etc. on the Jack Hammer and supply pneumatic / hydraulic /electro pneumatic system and seek corrective measures.	<b>30</b>	3	1	
	PC2. To check this for proper functionality of gauges, indicators, and sensor. Observe any fault message and diagnose the problem solution. Inform Technician and Fitters for any major repair.		3	1	
	PC3. Track machine-operating hours to assess the right service schedule.		2	1	
	PC4. Clean air filters dust bowls. Check for any leakage / damaged hoses.		2	1	
	PC5. Replace chisel bits when required.		2		



	PC6. Check structural integrity and any crack failure of stand or support structure.		2	1	
	PC7. Drain water and sediment /fuel separators. Replenish coolants, lubricants and fluids.		2		
	PC8. Carry out required lubrication, greasing and oil change as required.		3	1	
	PC9. Ensure proper Lock out and Tag out. Ensure the Jack Hammer air supply is shut off and pressure is relieved in the supply hose before changing tool points or carry out any maintenance activity.		2	1	
	PC10. Ensure cleaning of the drilling site and dispose of waste material and broken parts at appropriate place.		2		
	PC11. Check the machine parameters before restart the machine operation.		2	1	
	PC12. Assess when the problem is beyond his competence and report the problem to Technicians / Site engineer.		3		
	PC13. Update the daily/weekly maintenance sheets and logbook with works carried out and further works to be done.		2	1	
			<b>30</b>	<b>9</b>	<b>21</b>
3. MIN/N0901: Workplace Health and safety.	PC1. Comply with occupational health and safety regulations adopted by the employer.	<b>20</b>	2	1	1
	PC2. Follow mining operations procedures with respect to materials handling and accidents.		2	1	1
	PC3. Follow the correct safety steps in case of accident or major failure.		2	1	1
	PC4. Comply with safety regulations and procedures in case of fire hazard.		2	0	2
	PC5. Operate various grades of fire extinguishers.		2	1	1
	PC6. Work responsibly and as safe and careful as possible so as not to put the health and safety of self or others at risk, including members of the public		2	1	1
	PC7. Perform storage and transport of hazardous materials compliant with safety guidelines prescribed by DGMS.		2	0	2
	PC8. Deal with misfires as per statutory requirement		1	1	0
	PC9. Identify characteristics of post-blast fumes and take necessary precautions.		2	1	1



Qualifications Pack for Jack Hammer Operator



	PC10. Wears safety gear such as hard hat, respiratory protection, eye protection, ear protection.		1	0	2
	PC11. Follow the manufacturer's instructions for care and safe operation of the equipment.		1	0	1
		<b>Total</b>	<b>20</b>	<b>7</b>	<b>13</b>