





QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR CAPITAL GOODS INDUSTRY

What are Occupational Standards(OS)?

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

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Introduction

Qualifications Pack-Operator - Conventional Milling

SECTOR/S: CAPITAL GOODS

SUB-SECTOR:

- 1. Machine Tools
- 2. Dies, Moulds and Press Tools
- 3. Plastic Manufacturing Machinery
- 4. Textile Manufacturing Machinery

OCCUPATION: Machining

REFERENCE ID: CSC/Q0108

ALIGNED TO: NCO-2004/8211.30

5. Process Plant Machinery

6. Electrical and Power Machinery

7. Light Engineering Goods

Brief Job Description: Produce a range of components that combine a number of different features (eg. flat faces, parallel faces, faces that are flat and square to each other, angular faces, steps, slots and special forms) and continuously monitor the machining operations and make minor adjustments to settings if required.

Personal Attributes: Basic communication, numerical and computational abilities. Openness to learning, ability to plan and organise own work and identify and solve problems in the course of working. Understanding the need to take initiative and manage self and work to improve efficiency and effectiveness.







Qualifications Pack Code	C	CSC/Q0108	
Job Role	Operator - Conventional Milling [Applicable for National Scenarios]		
Credits	TBD	Version number	1.0
Sector	Capital Goods	Drafted on	10/04/2014
Sub-sector	 Machine Tools Dies, Moulds And Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Machining	Next review date	24/11/2021
NSQC Clearance on	26/03/2015		



Qualifications Pack For Operator - Conventional Milling





Job Role	Operator - Conventional Milling	
Role Description	Production of a range of components or performing machining by carrying out milling operations on a conventional milling machine.	
NSQF level	2	
Minimum Educational Qualifications	10 th Standard pass, preferably	
Maximum Educational Qualifications	Not Applicable	
Prerequisie License or Training	No Previous Training Required	
Minimum Job Entry Age	18 Years	
Experience	No Previous Experience Required	
Applicable National Occupational Standards (NOS)	Compulsory: 1. CSC/N0108 Operate conventional milling machines 2. CSC/N1335 Use basic health and safety practices at the workplace 3. CSC/N1336 Work effectively with others	
Performance Criteria	As described in the relevant OS units	







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 (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OSs, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
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.
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 need 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



Qualifications Pack For Operator - Conventional Milling





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	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.
Keywords /Terms	Description
CO₂	Carbon Dioxide
CPR	Cardiac Pulmonary Resuscitation
PPE	Personal Protective Equipment
ISO	International Organization For Standardization



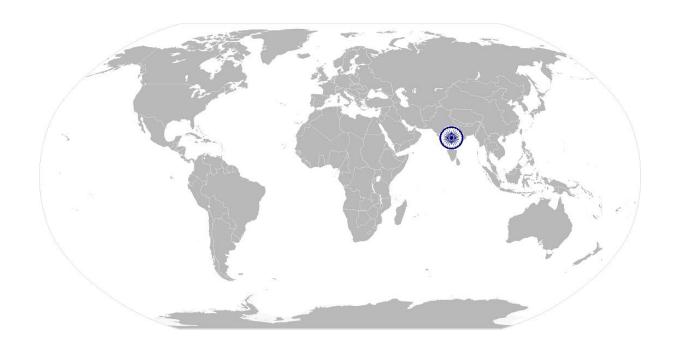






Operate conventional milling machines

National Occupational Standard



Overview

This unit covers producing a range of components or performing machining by carrying out milling operations on a milling machine.









Operate conventional milling machines

Unit Code	CSC/N0108
Unit Title	Operate conventional milling machines
(Task) Description	This unit covers performing milling operations on a milling machine, to produce a range
Description	of components that combine a number of different features (eg. flat faces, parallel
	faces, faces that are flat and square to each other, angular faces, steps, slots and special
	forms) on conventional horizontal milling machine and vertical milling machine.
Scope	This unit/task covers the following:
	This drift, task sovers the following.
	Work safely
	Prepare for operating conventional milling machine
	Carry out operations on conventional milling machine
	Handle unresolved problems
Performance Criteria(P	C) w.r.t. the Scope
Element	Performance Criteria
Work safely	To be competent, the user/individual on the job must be able to:
	PC1. comply with health and safety, enwirental and other relevant regulations
	and guidelines at work PC2. adhere to procedures and guidelines for personal protective equipment (PPE)
	PC2. adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing machining operations
	Personal protective equipment: eg. correctly fitting overalls; safety glasses;
	long hair is tied back or netted; removing any jewelry or other items that can
	become entangled in the machinery; covered shoes; face mask, etc
	PC3. work following laid down procedures and instructions
	PC4. ensure work area is clean and safe from hazards
	PC5. ensure that all tools, equipment, power tool cables, extension leads are in a
	safe and usable condition
Prepare for operating	To be competent, the user/individual on the job must be able to:
conventional milling	PC6. check that all measuring equipment is within calibration date
machine	PC7. ensure that the components used are free from foreign objects, dirt or other
	contamination
	PC8. ensure availability of job specification from a valid source
	Job specifications: instructions from supervisor/person-in charge, operational
	drawings; approved sketches/illustrations
	Valid sources: supervisor, job instruction sheet/job card; work drawings and
	instructions PCO road and establish job requirements from the job specification document /to
	PC9. read and establish job requirements from the job specification document (to
	include symbols and conventions to appropriate ISO standards in relation to









CSC/N0108	Operate conventional milling machines
	work undertaken)
	Job specifications documents: instructions from supervisor/person-incharge,
	operational drawings; approved sketches/illustrations
	PC10. prepare and maintain the work area as per procedure or operation
	specification
	PC11. confirm with the machine setter that the machine is ready for production
	PC12. seek any necessary instruction/training on the operation of the various milling machines, where appropriate
	Milling machines: horizontal milling machine, vertical milling machine
	PC13. ensure that machine guards are in place and are correctly adjusted
	PC14. identify different types of cutters used in horizontal and vertical milling
	machines
	PC15. identify different parts of the vertical and horizontal milling machine
	PC16. hold components securely, without distortion
	PC17. ensure that machine settings are adjusted as and when required to maintain
	the required accuracy and quality standards
	Quality standards: components to be free from false tool cuts, burrs and
	sharp edges; dimensional tolerance 0.020 to 0.030 mm; flatness and
	squareness within 0.125mm; surfactionish 63μin or 1.6μm; angles within +/-
	1 degree
Carry out operations	To be competent, the user/individual on the job must be able to:
on conventional	PC18. operate the machine controls in both hand and power modes
milling machine	PC19. stop the machine in both normal and emergency situations, and use correct
	procedure for restarting after an emergency
	PC20. use British and metric systems of measurement
	PC21. perform various milling operations to produce various features on metal and
	non-metal components
	Milling operations: e.g. milling of flat services; gang and straddle milling;
	milling of sunk and recessed surfaces, face milling, side milling, angular
	milling, slotting, slitting, key way cutting, face slot cutting, woodruff cutting,
	dovetail cutting, etc.
	Features: faces (flat, square, parallel, angular); steps/shoulders, slots
	(enclosed, open ended, tee slots), recesses, holes (drilled, bored), profile
	forms (such as vee, concave, convex, gear forms), serrations, forms (indexed, rotated, special)
	Metal and non-metals: Different materials: steel/stainless steel,
	aluminum/aluminum alloys, copper/copper alloys, cast iron, plastic
	PC22. produce components as per given quality standards
	Components quality standards as per the process: e.g. components to be
	free from false tool cuts, burrs and sharp edges; dimensional tolerance 0.020









CSC/N0108	Operate conventional milling machines
	to 0.030 mm; flatness and squareness within 0.125mm; surface finish 63µin
	or 1.6μm; angles within +/- 1 degree, etc.
	PC23. plan and work accordingly to achieve given production targets
	PC24. overcome the effects of backlash in machine slides and screws
	PC25. apply roughing and finishing cuts considering the effect on tool life, surface
	finish and dimensional accuracy
	PC26. apply cutting fluids with regard to a range of different materials
	PC27. clamp the work piece securely and without distortion in a chuck/work holding
	device such as vice, V-block, clamp, angle plate, etc.
	PC28. report any difficulties or problems that may arise with the milling activities,
	and carry out any agreed actions
	PC29. shut down the equipment to a safe condition on completion of the milling
	activities
	Safe conditions: correctly isolated; cleaning the machine; removing and
	disposing of waste correctly
	PC30. use range of equipment to check critical parameters
	Range of checking equipment: e.g. tri-square, bevel protractor, vernier
	caliper, micrometers (internal, external, depth), height gauge, go-no-go
	gauges, spring caliper, etc
	Critical parameters: dimensions, squareness, hole size/fit, angles, flatness;
	surface finish; slots; recesses
	PC31. perform the checks to be carried out on the components before removing
	them from the machine, and on the equipment needed for this activity
	PC32. ensure that the quality control procedures are used while operating the
	equipment
Handle unresolved	To be competent, the user/individual on the job must be able to:
problems	PC33. refer the problem to a competent internal specialist if it cannot be resolved
	PC34. obtain help or advice from specialist if the problem is outside his/her area of
	competence or experience
Knowledge and Unders	tanding (K)
A. Organizational	The user/individual on the job needs to know and understand:
Context	KA1. legislation, standards, policies, and procedures followed in the company
(Knowledge of the	relevant to own employment and performance conditions
company /	KA2. relevant health and safety requirements applicable in the work place
	KA2. relevant health and safety requirements applicable in the work place
organization and	KA2. Televant health and safety requirements applicable in the work place KA3. importance of working in clean and safe environment
organization and its processes)	
_	KA3. importance of working in clean and safe environment
_	KA3. importance of working in clean and safe environment KA4. own job role and responsibilities and sources for information pertaining to
_	KA3. importance of working in clean and safe environment KA4. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities









CSC/N0108	Operate conventional milling machines
	KA7. escalation matrix and procedures for reporting work and employment related
	issues
	KA8. documentation and related procedures applicable in the context of
	employment and work
	KA9. importance and purpose of documentation in context of employment and
	work
B. Technical	The user/individual on the job needs to know and understand:
Knowledge	KB1. wear personal protective equipment to be worn can be obtained
	KB2. hazards associated with the milling operations and how they can be minimized
	KB3. importance of keeping the work area clean and tidy
	KB4. where to obtain the component drawings, specifications and/ or job
	instructions required for them components to be machined
	KB5. how to read and interpret first and third angle component drawings
	KB6. how to extract information from engineering drawings or data and related
	specifications
	KB7. how to use British and metric systems of measurement
	KB8. main parts of conventional milling machines and the accessories that can be
	used
	Milling machines: horizontal milling machine, vertical milling machine
	Accessories: e.g. saddle, compound slide, tailstock, profile attachments, fixed
	and live stays, etc
	KB9. purpose and applications of milling
	KB10. different types of milling cutters and their uses
	KB11. various milling operations that can be performed, and the features produced
	on metal and non-metal components
	Milling operations: e.g. milling of flat services; gang and straddle milling;
	milling of sunk and recessed surfaces, face milling, side milling, angular
	milling, slotting, slitting, key way cutting, face slot cutting, woodruff cutting,
	dovetail cutting, etc.
	Features: faces (flat, square, parallel, angular); steps/shoulders, slots
	(enclosed, open ended, tee slots), recesses, holes (drilled, bored), profile
	forms (such as vee, concave, convex, gear forms), serrations, forms (indexed,
	rotated, special)
	KB12. processes of milling e.g. up milling, down milling, face milling, end milling, etc.
	KB13. effects of backlash in machine slides and screws, and how this can be
	overcome
	KB14. effects of clamping the workpiece in a chuck/ work holding device, and how
	this can cause distortion in the finished components
	KB15. production cost, machine hour rate, raw material cost, tool cost, coolant cost,









CSC/N0108	Operate conventional milling machines
	overheads, cycle time, idle time, cost of machine idling, part rejection cost
	KB16. selection of cutting tools, tool materials, chip breaker geometry, selecting
	cutting parameters from tool catalogues, selecting coolant
	KB17. relationship between metal cutting results, tool nose radius, speed and feed
	rate
	KB18. how to recognize machining faults and how to identify when tools need
	resharpening
	KB19. problems that can occur with the milling activities, and how these can be
	Overcome KB20 extent of their own outbority and to whom they should report if they have
	KB20. extent of their own authority and to whom they should report if they have
	problems that they cannot resolve
	KB21. safe working practices and environmental regulations that must be observed
Skills (S)	KB22. importance of reporting problems in a timely manner
	Deciding Chille
A. Core Skills/	Reading Skills
Generic Skills	The user/individual on the job needs to know and understand how to:
	SA1. read and interpret information correctly from various job specification
	documents, health and safety instructions, memos, etc. applicable to the job
	in English and/or local language
	Writing Skills
	The user/individual on the job needs to know and understand how to:
	SA2. fill up appropriate technical forms, process charts, activity logs as per
	organizational format in English and/or local language
	SA3. undertake numerical operations, and calculations/ formulae
	Numerical computations: addition, subtraction, multiplication, division,
	fractions and decimals, percentages and proportions, simple ratios and
	averages
	Algebraic expressions: represent numerical quantities using symbols, apply
	laws of precedence in the use of precedence (BODMAS)
	SA4. identify various basic, compound and solid shapes as per dimensions given
	Basic shapes: square, rectangle, triangle, circle
	Compound shapes: involving squares, rectangles, triangles, circles, semicircles,
	quadrants of a circle
	Solid shapes: cube, rectangular prism, cylinder
	SA5. use appropriate measuring techniques and units of measurement
	SA6. use appropriate units and number systems to express degree of accuracy
	Units and number systems representing degree of accuracy: decimals places,
	SA7. significant figures, fractions as a decimal quantity









CSC/N0108	Operate conventional milling machines
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA8. convey and share technical information clearly using appropriate language SA9. check and clarify task-related information SA10. liaise with appropriate authorities using correct protocol
	SA11. communicate with people in respectful form and manner in line with organizational protocol
B. Professional Skills	Decision Making
	NA
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB1. plan, prioritize and sequence work operations as per job requirements SB2. organize and analyze information relevant to work SB3. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB4. exercise restraint while expressing dissent and during conflict situations SB5. avoid and manage distractions to be disciplined at work SB6. manage own time for achieving better results SB7. work in a team in order to achieve better results SB8. identify and clarify work roles within a team SB9. communicate and cooperate with others in the team for better results SB10. seek assistance from fellow team members
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB11. identify problems with work planning, procedures, output and behavior and their implications SB12. prioritize and plan for problem solving SB13. communicate problems appropriately to others SB14. identify sources of information and support for problem solving SB15. seek assistance and support from other sources to solve problems SB16. identify effective resolution techniques SB17. select and apply resolution techniques SB18. seek evidence for problem resolution
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB19. undertake and express new ideas and initiatives to others









CSC/N0108 Operate conventional milling machines

- SB20. modify work plan to overcome unforeseen difficulties or developments that occur as work progresses
- SB21. participate in improvement procedures including process, quality and internal/external customer/supplier relationships
- SB22. enhance one's competencies in new and different situations and contexts to achieve more

Critical Thinking

The user/individual on the job needs to know and understand how to:

- SB23. participate in on-the-job and other learning, training and development interventions and assessments
- SB24. clarify task related information with appropriate personnel or technical adviser
- SB25. seek to improve and modify own work practices
- SB26. maintain current knowledge of application standards, legislation, codes of practice and product/process developments











Operate conventional milling machines

NOS Version Control

NOS Code	CSC/N0108		
Credits	TBD	Version number	1.0
Industry	Capital Goods	Drafted on	10/04/2014
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Machining	Next review date	24/11/2021



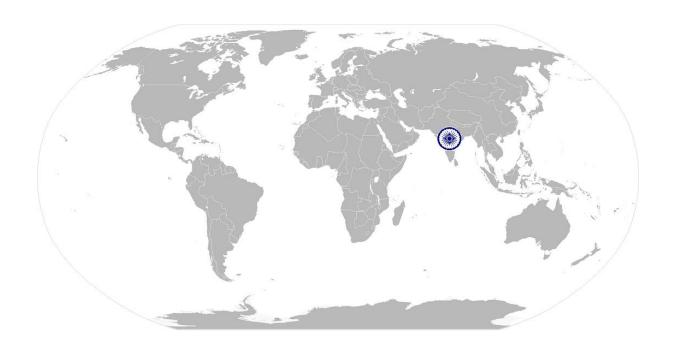






Use basic health and safety practices at the workplace

National Occupational Standard



Overview

This unit covers health, safety and security at the workplace. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.









CSC/N1335 Use basic health and safety practices at the workplace

Unit Code	CSC/N1335
Unit Title (Task)	Use basic health and safety practices at the workplace
Description	This OS unit is about knowledge and practices relating to health, safety and security
	that candidates need to use in the workplace. It covers responsibilities towards self,
	others, assets and the environment.
Scope	This unit/task covers the following:
	Health and safety
	Fire safety
	Emergencies, rescue and first-aid procedure
Performance Criteria(P	PC) w.r.t. the Scope
Element	Performance Criteria
	PC1. use protective clothing/equipment for specific tasks and work conditions Protective clothing: leather or asbeates gloves, flame proof aprons, flame proof overalls buttoned to neck, culfless (without folds), trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors Equipment: hand shields, machine guards, residual current devices, shields, dust sheets, respirator PC2. state the name and location of people responsible for health and safety in the workplace PC3. state the names and location of documents that refer to health and safety in the workplace PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards: sharp edged and heavy tools; heated metals; oxy fuel and gas cylinders; welding radiation; hazardous surfaces (sharp, slippery, uneven, chipped, broken, etc.); hazardous substances (chemicals, gas, oxy-fuel, fumes, dust, etc.); physical hazards (working at heights, large and heavy objects and machines, sharp and piercing objects, tolls and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc.) electrical hazards (power supply and points, loose





harness, fall arrestors, etc.





CSC/N1335 Use basic health and safety practices at the workplace

PC5.

drunkenness); health hazards (such as untreated injuries and contagious illness)

carry out safe working practices while dealing with hazards to ensure the

- safety of self and others

 Safe working practices: using protective clothing and equipment; putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; while working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.; safe lifting and carrying practices; use equipment that is working properly and is well maintained; take due measures for safety while
- PC6. state methods of accident prevention in the work environment of the job role Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors

working in confined places, trenches or at heights, etc. including safety

- PC7. state location of general health and safety equipment in the workplace General health and safety equipment: fire extinguishers; first aid equipment; safety instruments and clothing; safety installations (eg fire exits, exhaust fans)
- PC8. inspect for faults, set up and safely use steps and ladders in general use Ladder faults: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc.
 - Ladders set up: firm/level base, clip/lash down, leaning at the correct angle, etc.
- PC9. work safely in and around trenches, elevated places and confined areas
- PC10. lift heavy objects safely using correct procedures
- PC11. apply good housekeeping practices at all times

 Good housekeeping practices: clean/tidy work areas, removal/disposal of
 waste products, protect surfaces
- PC12. identify common hazard signs displayed in various areas

 Various areas: on chemical containers; equipment; packages; inside buildings;
 in open areas and public spaces, etc.
- PC13. retrieve and/or point out documents that refer to health and safety in the workplace









CSC/N1335 Us	se basic health and safety practices at the workplace		
	Documents: fire notices, accident reports, safety instructions for equipment		
	and procedures, company notices and documents, legal documents (eg		
	government notices)		
Fire safety	To be competent, the user/individual on the job must be able to:		
	PC14. use the various appropriate fire extinguishers on different types of fires		
	correctly		
	Types of fires: Class A: eg. ordinary solid combustibles, such as wood, paper,		
	cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as		
	gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C:		
	eg. electrical equipment such as appliances, wiring, breaker panels, etc.		
	(These categories of fires become Class A, B, and D fires when the electrical		
	equipment that initiated the fire is no longer receiving electricity); Class D:		
	combustible metals such as magnesium, titanium, and sodium (These fires		
	burn at extremely high temperatures and require special suppression agents)		
	PC15. demonstrate rescue techniques applied during fire hazard		
	PC16. demonstrate good housekeeping in order to prevent fire hazards		
	PC17. demonstrate the correct use of a fire extinguisher		
Emergencies, rescue	To be competent, the user/individual on the job must be able to:		
and first-aid	PC18. demonstrate how to free a person electrocution		
procedures	PC19. administer appropriate first aid to victims where required eg. in case of		
	bleeding, burns, choking, electric shock, poisoning etc.		
	PC20. demonstrate basic techniques of bandaging		
	PC21. respond promptly and appropriately to an accident situation or medical		
	emergency in real or simulated environments		
	PC22. perform and organize loss minimization or rescue activity during an accident		
	in real or simulated environments		
	PC23. administer first aid to victims in case of a heart attack or cardiac arrest due to		
	electric shock, before the arrival of emergency services in real or simulated		
	cases		
	PC24. demonstrate the artificial respiration and the CPR Process		
	PC25. participate in emergency procedures		
	Emergency procedures: raising alarm, safe/efficient, evacuation, correct		
	means of escape, correct assembly point, roll call, correct return to work		
	PC26. complete a written accident/incident report or dictate a report to another		
	person, and send report to person responsible		
	Incident Report includes details of: name, date/time of incident, date/time of		
	report, location, environment conditions, persons involved, sequence of		
	events, injuries sustained, damage sustained, actions taken, witnesses,		
	supervisor/manager notified		









	PC27. demonstrate correct method to move injured people and others during an
	emergency
Knowledge and Unders	standing (K)
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace KA2. names and location of documents that refer to health and safety in the workplace
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. meaning of "hazards" and "risks" KB2. health and safety hazards commonly present in the work environment and related precautions KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible KB4. possible causes of risk and accident prossible causes of risk and accident prossible causes of risk and accident in the workplace and why risk and giving instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness) KB5. methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors KB6. safe working practices when working with tools and machines KB7. safe working practices while working at various hazardous sites KB8. where to find all the general health and safety equipment in the workplace various dangers associated with the use of electrical equipment KB10. preventative and remedial actions to be taken in the case of exposure to toxi materials Exposure: ingested, contact with skin, inhaled Preventative action: ventilation, masks, protective clothing/ equipment); Remedial action: immediate first aid, report to supervisor Toxic materials: solvents, flux, lead KB11. importance of using protective clothing/equipment while working KB12. precautionary activities to prevent the fire accident KB13. various causes of fire









	ic health and safety practices at the workplace		
	heating; loose fires (smoking, welding, etc.); chemical fires; etc.		
KI	314. techniques of using the different fire extinguishers		
KI	315. different methods of extinguishing fire		
KI	316. different materials used for extinguishing fire		
	Materials: sand, water, foam, CO ₂ , dry powder		
KI	KB17. rescue techniques applied during a fire hazard		
KI	KB18. various types of safety signs and what they mean		
KI	KB19. appropriate basic first aid treatment relevant to the condition eg. shock,		
	electrical shock, bleeding, breaks to bones, minor burns, resuscitation,		
	poisoning, eye injuries		
KI	320. content of written accident report		
KI	321. potential injuries and ill health associated with incorrect manual handing		
KI	322. safe lifting and carrying practices		
K	323. personal safety, health and dignity issues relating to the movement of a		
	person by others		
¹,KI	324. potential impact to a person who is moved incorrectly		
tills (S)			
Core Skills/ Re	ading Skills		
Generic Skills	user/ individual on the job needs to know and understand how to:		
	1. read and comprehend basic content to read labels, charts, signages		
	A2. read and comprehend basic English to read manuals of operations		
	SA3. read an accident/incident report in local language or English		
	Writing Skills		
	e user/individual on the job needs to know and understand how to:		
	A4. write an accident/incident report in local language or English		
Ora	Oral Communication (Listening and Speaking skills)		
The	user/individual on the job needs to know and understand how to:		
SA	A5. question coworkers appropriately in order to clarify instructions and other		
	issues		
SA	A6. give clear instructions to coworkers, subordinates others		
Professional Skills De	cision Making		
The	user/individual on the job needs to know and understand how to:		
SI	31. make appropriate decisions pertaining to the concerned area of work with		
	respect to intended work objective, span of authority, responsibility, laid		
	down procedure and guidelines		
Pla	Plan and Organize		
1 - 1-4			
	user/individual on the job needs to know and understand how to:		









CSC/N1335	Use	basic health and safety pract	tices at the workplace

ose busic neurin una surety practices at the workplace					
	materials to maintain decorum and for improved productivity				
	Customer Centricity				
	The user/individual on the job needs to know and understand how to:				
	SB3. remain congenial while discussing and debating issues with co-workers				
	SB4. follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice				
	SB5. ask for, provide and receive required assistance where possible to ensure				
	achievement of work related objectives				
	SB6. thank coworkers for any assistance received				
	SB7. offer appropriate respect based on mutuality and respect for fellow				
	workmanship and authority				
	Problem Solving				
	The user/individual on the job needs to know and understand how to:				
	SB8. think through the problem, evaluate the possible solution(s) and suggest an				
	optimum /best possible solution(s)				
	SB9. identify immediate or temporary solutions to resolve delays				
	SB10. identify sources of support that can be availed of for problem solving for				
	various kind of problems				
	SB11. seek appropriate assistance from other sources to resolve problems				
	SB12. report problems that you cannot resolve to appropriate authority				
	Analytical Thinking				
	The user/individual on the job needs to know and understand how to:				
	SB13. identify cause and effect relations in their area of work				
	SB14. use cause and effect relations to anticipate potential problems and their				
	solution				
	Critical Thinking				

NA









Use basic health and safety practices at the workplace

NOS Version Control

NOS Code	CSC/N1335		
Credits	TBD	Version number	1.0
Industry	Capital Goods	Drafted on	10/04/2014
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Machining	Next review date	24/11/2021



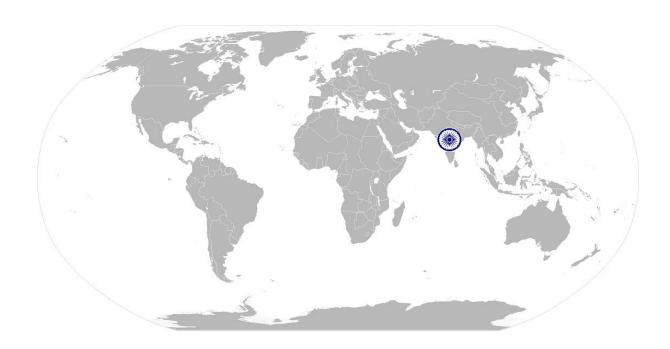






Work effectively with others

National Occupational Standard



Overview

This unit covers basic practices that improve effectiveness of working with others in an organizational set-up.









Work effectively with others

Unit Code	CSC/N1336
Unit Title	Work effectively with others
(Task) Description Scope	This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace. These cover areas such as communication etiquette, discipline, listening etc. This unit/task covers the following: • Work effectively with others
Performance Criteria (F	PC) w.r.t. the Scope
Work effectively with others	To be competent, the user/individual on the job must be able to: PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt PC3. give information to others clearly, at a pace and in a manner that helps them to understand PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks PC6. display appropriate communication etiquette while working Communication etiquette: do not use abusive language; use appropriate titles and terms of respect; do not eat or chew while talking (vice versa) etc. PC7. display active listening skills while interacting with others at work PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism PC9. demonstrate responsible and disciplined behaviors at the workplace Disciplined behaviors: e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc.
	PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict
Knowledge and Unders	tanding (K)
A. Organizational Context (Knowledge of the company /	The user/individual on the job needs to know and understand: KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. reporting structure, inter-dependent functions, lines and procedures in the









CSC/N1336	Work effectively with others		
organization and	work area		
its processes)	KA3. relevant people and their responsibilities within the work area		
	KA4. escalation matrix and procedures for reporting work and employment related		
	issues		
B. Technical	The user/individual on the job needs to know and understand:		
Knowledge	KB1. various categories of people that one is required to communicate and co-		
	ordinate with in the organization		
	KB2. importance of effective communication in the workplace		
	KB3. importance of teamwork in organizational and individual success		
	KB4. various components of effective communication		
	KB5. key elements of active listening		
	KB6. value and importance of active listening and assertive communication		
	KB7. barriers to effective communication		
	KB8. importance of tone and pitch in effective communication		
	KB9. Importance of avoiding casual expletives and unpleasant terms while		
	communicating professional circles		
	KB10. how poor communication practices can disturb people, environment and		
	cause problems for the employee, the employer and the customer		
	importance of ethics for professional success		
	importance of discipline for professional success		
	KB13. what constitutes disciplined behavior for a working professional		
	KB14. common reasons for interpersonal conflict		
	KB15. importance of developing effective working relationships for professional		
	success		
	KB16. expressing and addressing grievances appropriately and effectively		
	KB17. importance and ways of managing interpersonal conflict effectively		
Skills (S)			
A. Core Skills/	Reading Skills		
Generic Skills	The user/ individual on the job needs to know and understand how to:		
	SA1. read basic terms and terminologies to accurately interpret work related		
	documents, labels, supervisor instructions in the local language		
	SA2. read and interpret accurate information from various relevant work		
	instructions and records		
	Writing Skills		
	The user/ individual on the job needs to know and understand how to:		
	SA3. write clear and legible notes to self, colleagues and seniors to pass messages,		
	keep records, prepare to-do lists, take down instructions		
	SA4. write basic numbers, quantities and work related terminology for operational		
	requirements in the local language		









CSC/N1336	Work effectively with others		
	Oral Communication (Listening and Speaking skills)		
	The user/individual on the job needs to know and understand how to: SA5. interact with the supervisor appropriately (correct protocol and manner of speaking) in order to understand the basic requirements of the product, production plans and other associated requirements		
	SA6. give clear instructions to co-workers about the type of output required and answer queries		
	SA7. display active listening skills while interacting with co-workers and other in the workplace		
B. Professional Skills	Decision Making		
	NA		
	Plan and organize		
	The user/individual on the job needs to know and understand how to:		
	SB1. use appropriate planning to maintain a smooth relationship with fellow team		
	members		
	SB2. take steps within one's limits of authority to initiate modification in plan if the circumstances require it		
	Customer centricity		
	The user/individual on the job needs to know and understand how to: SB3. check that work meets customer requirements SB4. deliver consistent and reliable service to internal and external customers		
	Problem Solving		
	The user/individual on the job needs to know and understand how to: SB5. work with co-workers and supervisor to resolve any issues that threaten		
	disruption, increase risk, cause delays or under-achievement of quality and targets as per the planned schedule		
	Analytical Thinking		
	NA		
	Critical Thinking		
	NA		









Work effectively with others

NOS Version Control

NOS Code		CSC/N1336		
Credits	TBD	Version number	1.0	
Industry	Capital Goods	Drafted on	10/04/2014	
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery 	Last reviewed on	24/11/2017	
Occupation	Machining	Next review date	24/11/2021	



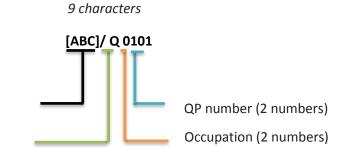




Annexure

Nomenclature for QP and NOS

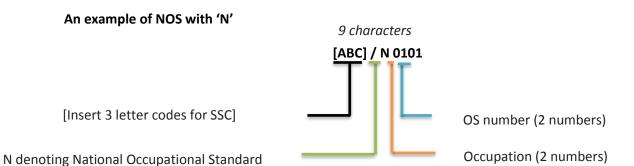
Qualifications Pack



[Insert 3 letter codes for SSC]

Q denoting Qualifications Pack

Occupational Standard



Back to top...







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

Sub-sector	Range of Occupation numbers		
Machine Tools	01-13		
Dies, Moulds and Press Tools	01-13		
Plastic Manufacturing Machinery	01-13		
Textile Manufacturing Machinery	01-13		
Process Plant Machinery	01-13		
Electrical and Power Machinery	01-13		
Light Engineering Goods	01-13		

Sequence	Description	Example
Three letters	Capital Goods	CSC
Slash	/	/
Next letter	Whether Q P or N OS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01







Criteria For Assessment Of Trainees

Job Role: Operator - Conventional Milling

Qualification Pack: CSC/Q0108

Sector Skill Council: Capital Goods Skills Council

Guidelines for Assessment

- 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
- 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
- 3. 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 70% 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 Total Marks: 300		Marks Allocation			
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
CSC/N0108 Operate conventional milling machines	PC1.comply with health and safety, environmental and other relevant regulations and guidelines at work		3	1	2
	PC2.adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing machining operations		3	1	2
	PC3.work following laid down procedures and instructions	100	3	1	2
	PC4.ensure work area is clean and safe from hazards	-	2	0	2
	PC5.ensure that all tools, equipment, power tool cables, extension leads are in a safe and usable condition		2	0	2
	PC6.check that all measuring equipment is within calibration date		2	0	2







PC7.ensure that the components used are free from foreign objects, dirt or other contamination	2	0	2
PC8.ensure availability of job specification from a valid source	2	0	2
PC9.read and establish job requirements from the job specification document (to include symbols and conventions to appropriate ISO standards in relation to work undertaken)	3	1	2
PC10.prepare and maintain the work area as per procedure or operation specification	3	1	2
PC11.confirm with the machine setter that the machine is ready for production	2	0	2
PC12.seek any necessary instruction/training on the operation of the various milling machines, where appropriate	3	0	3
PC13.ensure that machine guards are in place and are correctly adjusted	3	1	2
PC14.identify different types of cutters used in horizontal and vertical milling machines	3	0	3
PC15.identify different parts of the vertical and horizontal milling machine	3	0	3
PC16.hold components securely, without distortion	2	0	2
PC17.ensure that machine settings are adjusted as and when required to maintain the required accuracy and quality standards	3	1	2
PC18.operate the machine controls in both hand and power modes	3	0	3
PC19.stop the machine in both normal and emergency situations, and use correct procedure for restarting after an emergency	3	1	2
PC20.use British and metric systems of measurement	3	1	2
PC21.perform various milling operations to produce various features on metal and non-metal components	5	1	4
PC22.produce components as per given quality standards	5	1	4
PC23.plan and work accordingly to achieve given production targets	5	1	4
PC24.overcome the effects of backlash in machine slides and screws	3	1	2







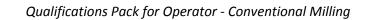
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	PC25.apply roughing and finishing cuts considering the effect on tool life, surface finish and dimensional accuracy		3	0	3
	PC26.apply cutting fluids with regard to a range of different materials		3	0	3
	PC27.clamp the work piece securely and without distortion in a chuck/work holding device such as vice, V-block, clamp, angle plate, etc.		3	0	3
	PC28.report any difficulties or problems that may arise with the milling activities and carry out any agreed actions		3	1	2
	PC29.shut down the equipment to a safe condition on completion of the milling activities		2	0	2
	PC30.use range of equipment to check critical parameters		3	0	3
	PC31.perform the checks to be carried out on the components before removing them from the machine, and on the equipment needed for this activity		4	1	3
	PC32.ensure that the quality control procedures are used while operating the equipment		2	0	2
	PC33.refer the problem to a competent internal specialist if it cannot be resolved		3	1	2
	PC34.obtain help or advice from specialist if the problem is outside his/her area of competence or experience		3	1	2
		Total	100	17	83
CSC/N1335 Use basic health and	PC1.use protective clothing/equipment for specific tasks and work conditions		5	2	3
safety practices at the workplace	PC2.state the name and location of people responsible for health and safety in the workplace		3	1	2
	PC3.state the names and location of documents that refer to health and safety in the workplace		3	1	2
	PC4.identify job-site hazardous work and state possible causes of risk or accident in the workplace	100	5	2	3
	PC5.carry out safe working practices while dealing with hazards to ensure the safety of self and others		4	2	2
1	PC6.state methods of accident prevention in the work	1	3	2	1
	environment of the job role		3	2	1







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PC8.inspect for faults, set up and safely use steps and ladders in general use	5	2	3
PC9.work safely in and around trenches, elevated places and confined areas	5	2	3
PC10.lift heavy objects safely using correct procedures	4	2	2
PC11.apply good housekeeping practices at all times	5	2	3
PC12.identify common hazard signs displayed in various areas	3	1	2
PC13.retrieve and/or point out documents that refer to health and safety in the workplace	4	1	3
PC14.use the various appropriate fire extinguishers on different types of fires correctly	4	1	3
PC15.demonstrate rescue techniques applied during fire hazard	3	1	2
PC16.demonstrate good housekeeping in order to prevent fire hazards	4	1	3
PC17.demonstrate the correct use of a fire extinguisher	4	1	3
PC18.demonstrate how to free a person from electrocution	4	1	3
PC19.administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.	3	1	2
PC20.demonstrate basic techniques of bandaging	4	1	3
PC21.respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments	3	1	2
PC22.perform and organize loss minimization or rescue activity during an accident in real or simulated environments	3	1	2
PC23.administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases	3	1	2
PC24.demonstrate the artificial respiration and the CPR Process	3	2	1
PC25.participate in emergency procedures	2	1	1
PC26.complete a written accident/incident report or dictate a report to another person, and send report to person responsible	3	1	2









	PC27.demonstrate correct method to move injured people and others during an emergency		3	1	2
		Total	100	37	63
CSC/N1336 Work effectively with others	PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required		10	3	7
	PC2.accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3.give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4.display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible	100	10	3	7
	PC5.consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
	PC6.display appropriate communication etiquette while working		10	3	7
	PC7.display active listening skills while interacting with others at work		10	3	7
	PC8.use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	3	7
	PC9.demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10.escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7
		Total	100	30	70