

Qualification Pack



Oxy Fuel Gas Cutter

QP Code: CSC/Q0201

Version: 2.0

NSQF Level: 2

Capital Goods Skill Council || 1st Floor, L-29, Outer Circle, Connaught Place
New Delhi - 110001 || email: coo@cgsc.in



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CSC/Q0201: Oxy Fuel Gas Cutter

Brief Job Description

The incumbent in the job is responsible for performing manual oxy-fuel cutting different materials (cast mild steels, high tensile/special steels, carbon alloys and other materials) in various profiles and other activities such as inspection of equipment condition, gauging, testing and inspection of cut work pieces.

Personal Attributes

The job holder must have an eye for detail as well as the patience and discipline required to carry out detailed and repetitive tasks. The candidate should be able to read and understand technical manuals, instructions and warnings

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CSC/N1335: Follow the health and safety practices at the workplace](#)
2. [CSC/N1336: Coordinate with co-workers to achieve work efficiency](#)
3. [CSC/N0201: Manually cut metal and metal alloys using oxy-fuel gases](#)

Qualification Pack (QP) Parameters

Sector	Capital Goods
Sub-Sector	<ol style="list-style-type: none"> 1. Machine Tools 2. Dies, Moulds and Press Tools 3. Plastics Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering Goods
Occupation	Welding and Cutting
Country	India
NSQF Level	2
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7212.0400

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Minimum Educational Qualification & Experience	Ability to read and write, wherever required or 5th Class
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	
Next Review Date	
Deactivation Date	
NSQC Approval Date	
Version	2.0
Reference code on NQR	
NQR Version	2.0

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CSC/N1335: Follow the health and safety practices at work

Description

This OS unit is about following the appropriate health and safety practices at work. It covers responsibilities towards self and others to ensure a safe work environment.

Scope

This unit/task covers the following:

- Maintain personal health and safety
- Assist in hazard management
- Check the first aid box, firefighting and safety equipment
- Assist in waste management
- Follow the fire safety guidelines
- Follow the emergency and first-aid procedures
- Carry out relevant documentation and review

Elements and Performance Criteria

Maintain personal health and safety

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

- PC1. follow the recommended practices to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask
- PC2. check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them
- PC3. select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions
- PC4. follow the recommended techniques while lifting and moving heavy objects to avoid injury
- PC5. follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment

Assist in hazard management

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

- PC6. identify existing and potential hazards at work
- PC7. assess the potential risks and injuries associated with the identified hazards
- PC8. coordinate with the supervisor or other relevant personnel to prevent or minimise the identified hazards
- PC9. handle hazardous materials safely and store them in the designated storage

Check the first aid box, firefighting and safety equipment

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

- PC10. check the first aid box to ensure it is updated with the relevant first aid supplies
- PC11. check and test the firefighting and various safety equipment to ensure they are in usable condition

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PC12. coordinate with the supervisor for the repair and replacement of firefighting and safety equipment

Assist in waste management

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

PC13. segregate waste into appropriate categories

PC14. recycle the recyclable waste appropriately

PC15. dispose of the non-recyclable waste in an environment-friendly manner, complying with the applicable regulations

Follow the fire safety guidelines

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

PC16. use the appropriate type of fire extinguisher to extinguish different types of fires safely

PC17. follow the recommended practices for a safe rescue during a fire emergency

PC18. coordinate with the fire department to request assistance to extinguish a serious fire

Follow the emergency and first-aid procedures

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

PC19. follow the organisational health and safety guidelines during workplace emergencies to ensure own and co-workers' safety

PC20. follow the recommended practices to minimise loss to organisational property during an emergency

PC21. follow the recommended procedure to free a person from electrocution

PC22. administer appropriate first aid to the injured personnel

PC23. perform Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest

PC24. coordinate with the emergency services to request medical assistance for seriously injured/ ill personnel requiring professional medical attention or hospitalisation

Carry out relevant documentation and review

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

PC25. carry out appropriate documentation following a health and safety incident at work, including all the required information

PC26. coordinate with the relevant personnel to review health and safety conditions at work regularly or following an incident

PC27. assist in implementing appropriate changes to improve the health and safety conditions at work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the recommended practices to be followed to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask

KU2. the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them

KU3. the importance and process of selecting and using the appropriate PPE relevant to the task

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and work conditions

- KU4. the recommended techniques to be followed while lifting and moving heavy objects to avoid injury
- KU5. the importance of following the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment
- KU6. the importance and process of identifying existing and potential hazards at work
- KU7. the process of assessing the potential risks and injuries associated with the various hazards
- KU8. how to prevent or minimise different types of hazards
- KU9. how to handle and store hazardous materials safely
- KU10. the importance of ensuring the first aid box is updated with the relevant first aid supplies
- KU11. the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable condition
- KU12. the criteria for segregating waste into appropriate categories
- KU13. the appropriate methods for recycling the recyclable waste
- KU14. the process of disposing of the non-recyclable waste safely and the applicable regulations
- KU15. use of different types of fire extinguishers to extinguish different types of fires
- KU16. the recommended practices to be followed for a safe rescue during a fire emergency
- KU17. how to request assistance from the fire department to extinguish a serious fire
- KU18. the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property
- KU19. common health and safety hazards present in a work environment, associated risks, and how to mitigate them
- KU20. safe working practices to be followed while working at various hazardous sites and using electrical equipment
- KU21. the importance of ensuring easy access to firefighting and safety equipment
- KU22. the appropriate preventative and remedial actions to be taken in the case of exposure to toxic materials, such as poisonous chemicals and gases
- KU23. various causes of fire in different work environments and the recommended precautions to be taken to prevent fire accidents
- KU24. different methods of extinguishing fire
- KU25. different materials used for extinguishing fire, such as sand, water, foam, CO₂, dry powder, etc.
- KU26. the applicable rescue techniques to be followed during a fire emergency
- KU27. the importance of placing safety signs and instructions at strategic locations in a workplace and following them
- KU28. different types of first aid treatment to be provided for different types of injuries
- KU29. potential injuries associated with incorrect manual handling
- KU30. how to move an injured person safely
- KU31. various hazards associated with the use of various machinery, tools, implements, equipment and materials
- KU32. the importance of ensuring no obstruction and free access to fire exits



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- KU33. how to free a person from electrocution safely
- KU34. how to administer appropriate first aid to an injured person
- KU35. how to perform Cardiopulmonary Resuscitation (CPR)
- KU36. the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalisation
- KU37. the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included
- KU38. the importance and process of reviewing the health and safety conditions at work regularly or following an incident
- KU39. the importance and process of implementing appropriate changes to improve the health and safety conditions at work

Generic Skills (GS)

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

- GS1. maintain work-related notes and records
- GS2. communicate clearly and politely with co-workers and clients
- GS3. read the relevant literature to get the latest updates about the field of work
- GS4. listen attentively to understand the information being shared
- GS5. plan and prioritise tasks to ensure timely completion
- GS6. take quick decisions to deal with workplace emergencies and accidents
- GS7. identify possible disruptions to work and take appropriate preventive measures
- GS8. coordinate with the co-workers to achieve the work objectives
- GS9. evaluate all possible solutions to a problem to select the best one

Assessment Criteria

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain personal health and safety</i>	7	12	-	-
PC1. follow the recommended practices to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask	2	3	-	-
PC2. check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them	1	2	-	-
PC3. select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions	1	2	-	-
PC4. follow the recommended techniques while lifting and moving heavy objects to avoid injury	1	3	-	-
PC5. follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment	2	2	-	-
<i>Assist in hazard management</i>	4	10	-	-
PC6. identify existing and potential hazards at work	1	1	-	-
PC7. assess the potential risks and injuries associated with the identified hazards	1	3	-	-
PC8. coordinate with the supervisor or other relevant personnel to prevent or minimise the identified hazards	1	3	-	-
PC9. handle hazardous materials safely and store them in the designated storage	1	3	-	-
<i>Check the first aid box, firefighting and safety equipment</i>	3	7	-	-
PC10. check the first aid box to ensure it is updated with the relevant first aid supplies	1	2	-	-
PC11. check and test the firefighting and various safety equipment to ensure they are in usable condition	1	3	-	-
PC12. coordinate with the supervisor for the repair and replacement of firefighting and safety equipment	1	2	-	-
<i>Assist in waste management</i>	3	8	-	-
PC13. segregate waste into appropriate categories	1	3	-	-
PC14. recycle the recyclable waste appropriately	1	3	-	-

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PC15.dispose of the non-recyclable waste in an environment-friendly manner, complying with the applicable regulations	1	2	-	-
<i>Follow the fire safety guidelines</i>	3	12	-	-
PC16.use the appropriate type of fire extinguisher to extinguish different types of fires safely	1	4	-	-
PC17.follow the recommended practices for a safe rescue during a fire emergency	1	4	-	-
PC18.coordinate with the fire department to request assistance to extinguish a serious fire	1	4	-	-
<i>Follow the emergency and first-aid procedures</i>	7	12	-	-
PC19.follow the organisational health and safety guidelines during workplace emergencies to ensure own and co-workers' safety	1	2	-	-
PC20.follow the recommended practices to minimise loss to organisational property during an emergency	1	3	-	-
PC21.follow the recommended procedure to free a person from electrocution	1	2	-	-
PC22.administer appropriate first aid to the injured personnel	1	2	-	-
PC23.perform Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest	1	2	-	-
PC24.coordinate with the emergency services to request medical assistance for seriously injured/ ill personnel requiring professional medical attention or hospitalisation	2	1	-	-
<i>Carry out relevant documentation and review</i>	3	9	-	-
PC25.carry out appropriate documentation following a health and safety incident at work, including all the required information	1	3	-	-
PC26.coordinate with the relevant personnel to review health and safety conditions at work regularly or following an incident	1	3	-	-
PC27.assist in implementing appropriate changes to improve the health and safety conditions at work	1	3	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	CSC/N1335
NOS Name	Follow the health and safety practices at the work
Sector	Capital Goods
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
Deactivation Date	
NSQC Clearance Date	

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CSC/N1336: Coordinate with co-workers to achieve work efficiency

Description

This OS unit is about working in coordination with co-workers to achieve the work objectives efficiently. It also covers practising inclusion at work.

Scope

This unit/task covers the following:

- Work effectively with co-workers
- Communicate effectively with co-workers
- Practice inclusion at work

Elements and Performance Criteria

Work effectively with co-workers

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

- PC1. plan daily tasks at work to ensure their timely completion and efficient use of time
- PC2. carry out work responsibilities adhering to the limits of authority
- PC3. follow the supervisor's instructions to ensure adherence to the applicable quality standards and timescales
- PC4. coordinate with the co-workers to achieve the work objectives efficiently
- PC5. prepare the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically
- PC6. coordinate with the supervisor or relevant personnel to deal with out of authority tasks and concerns
- PC7. mentor and assist subordinates in the execution of their work responsibilities
- PC8. identify possible disruptions to work through coordination with the relevant stakeholders and take appropriate preventive measures
- PC9. use various resources efficiently to ensure maximum utilisation and minimum wastage
- PC10. follow the recommended practices to avoid and resolve conflicts at work
- PC11. follow the relevant organisational policies to ensure disciplined behaviour with maximum productivity at work

Communicate effectively with co-workers

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

- PC12. follow the organisational policy for the efficient and timely dissemination of information to the authorised personnel
- PC13. communicate clearly and politely to ensure effective communication with co-workers
- PC14. follow the appropriate techniques for active listening during interactions

Practice inclusion at work

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

- PC15. empathise with Persons with Disabilities (PwD)

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PC16. adopt gender-neutral behaviour at work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. the importance and process of effective communication in the workplace
- KU2. the barriers to effective communication and how to overcome them
- KU3. the importance of teamwork in an organisation's and individual's success
- KU4. the importance of active listening in the work environment
- KU5. the appropriate techniques to be followed for active listening
- KU6. importance of tone and pitch in effective communication
- KU7. importance of avoiding casual expletives and unpleasant terms while communicating professional circles
- KU8. the importance of maintaining discipline and ethical behaviour at work
- KU9. the common reasons for interpersonal conflict and how to resolve them
- KU10. the importance of developing effective working relationships for professional success
- KU11. how expressing and addressing grievances appropriately and effectively
- KU12. the importance and process of planning daily tasks to ensure their timely completion and efficient use of time
- KU13. the importance of adhering to the limits of authority at work
- KU14. the importance of following the applicable quality standards and timescales at work
- KU15. the importance of coordinating with the co-workers to achieve the work objectives efficiently
- KU16. the relevant documentation requirements
- KU17. the importance of providing appropriate information clearly and systematically in work documents
- KU18. the escalation matrix to be followed to deal with out of authority tasks and concerns
- KU19. the importance and process of mentoring and assisting subordinates in the execution of their work responsibilities
- KU20. how to identify possible disruptions to work prevent them
- KU21. how to use various resources efficiently to ensure maximum utilisation and minimum wastage
- KU22. the recommended practices to be followed at work to avoid and resolve conflicts at work
- KU23. the importance and process of efficient and timely dissemination of information to the authorised personnel
- KU24. how to communicate clearly and politely to ensure effective communication
- KU25. the importance of following the recommended practices to ensure an inclusive environment for PwD and all genders at work

Generic Skills (GS)



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

- GS1. maintain work-related notes and records
- GS2. read work-related and other relevant literature
- GS3. communicate politely and -professionally
- GS4. listen attentively to understand the information or instructions being shared
- GS5. plan and prioritise tasks to ensure timely completion
- GS6. take prompt decisions to deal with workplace emergencies and accidents
- GS7. evaluate all possible solutions to a problem to select the best one

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Work effectively with co-workers</i>	20	24	-	-
PC1. plan daily tasks at work to ensure their timely completion and efficient use of time	2	4	-	-
PC2. carry out work responsibilities adhering to the limits of authority	2	4	-	-
PC3. follow the supervisor's instructions to ensure adherence to the applicable quality standards and timescales	2	4	-	-
PC4. coordinate with the co-workers to achieve the work objectives efficiently	2	4	-	-
PC5. prepare the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically	2	4	-	-
PC6. coordinate with the supervisor or relevant personnel to deal with out of authority tasks and concerns	2	4	-	-
PC7. mentor and assist subordinates in the execution of their work responsibilities	2	4	-	-
PC8. identify possible disruptions to work through coordination with the relevant stakeholders and take appropriate preventive measures	2	4	-	-
PC9. use various resources efficiently to ensure maximum utilisation and minimum wastage	2	4	-	-
PC10. follow the recommended practices to avoid and resolve conflicts at work	1	4	-	-
PC11. follow the relevant organisational policies to ensure disciplined behaviour with maximum productivity at work	1	3	-	-
<i>Communicate effectively with co-workers</i>	6	15	-	-
PC12. follow the organisational policy for the efficient and timely dissemination of information to the authorised personnel	2	5	-	-
PC13. communicate clearly and politely to ensure effective communication with co-workers	2	5	-	-
PC14. follow the appropriate techniques for active listening during interactions	2	5	-	-
<i>Practice inclusion at work</i>	4	12	-	-



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PC15. empathise with Persons with Disabilities (PwD)	2	6	-	-
PC16. adopt gender-neutral behaviour at work	2	6	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CSC/N1336
NOS Name	Coordinate with co-workers to achieve work efficiency
Sector	Capital Goods
Sub-Sector	Generic
Occupation	Generic
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
Deactivation Date	
NSQC Clearance Date	

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CSC/N0201: Manually cut metal and metal alloys using oxy-fuel gases

Description

This unit is about performing gas cutting and post-cutting operations as per the given work order and the standards specified by the organization.

Scope

This unit/task covers the following:

- Prepare for cutting operations
- Perform oxy-gas cutting operations
- Perform post-cutting operations

Elements and Performance Criteria

Prepare for cutting operations

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

- PC1. identify the cutting work to be done by interpreting the engineering drawing, Welding Procedure Specification (WPS) and job orders
- PC2. identify the tools, cutting torch, machine, measuring instruments, accessories, consumables and input materials (mild carbon steel, high tensile and special steels, other materials) as per the requirements mentioned in WPS or drawing
- PC3. select and arrange the right material, equipment, fixtures, accessories such as regulators, hoses and valve and consumables such as shielding gas etc. as per the SOP and job requirements
- PC4. select the correct type of nozzle, consumables, gases and oxy-gas cutting equipment required for the job by following WPS and drawing
- PC5. check the input material, tools, equipment and accessories for any defects, leakages and that they are as per the required quality standards
- PC6. prepare the work area for cutting activities
- PC7. set the oxy-gas cutting apparatus and its parameters as per the WPS and SOP
- PC8. ensure that a flashback arrestor is fitted with the apparatus
- PC9. use correct technique for lighting, adjusting and extinguishing the arc
- PC10. adjust torch valve for the type of flame such as neutral, carburizing and oxidizing
- PC11. mark the correct measurements on the workpiece by using appropriate tools and measuring instruments as specified in drawing or WPS

Perform oxy-gas cutting operations

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

- PC12. follow safety precautions during cutting work as per SOP and organizational guidelines
- PC13. start the gas cutting machine for cutting operations
- PC14. adjust cylinder valves and regulator for operating pressure to achieve required specifications
- PC15. perform oxy-gas cutting process as per SOP and produce items/cut shapes to the dimensions and profiles specified in WPS and drawing

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- PC16. perform various cutting operations correctly and produce thermal cuts in various forms of material (metal of 3mm and above) which meet specified quality criteria i.e. dimensional accuracy is within the tolerances specified on the drawing/specification, or within +/- 2mm; angled/radial cuts are within specification requirements; cuts are clean and smooth and free from flutes; no drags
- PC17. recognize and correct burn-back and flashback
- PC18. measure the final workpiece and compare with the dimensions as prescribed in the WPS and engineering drawing
- PC19. shut down the cutting equipment and remove the workpiece after completion of cutting activities

Perform post-cutting operations

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

- PC20. check the work pieces as per the work instructions for product quality
- PC21. identify defects in the completed workpiece by using appropriate methods and equipment
- PC22. separate the defective pieces which can be repaired/ reworked and pieces which are beyond repair
- PC23. clean and store all the tools, machine and equipment after completion of work
- PC24. check the machine operations for any malfunctions/defects in the component and immediately inform the supervisor/maintenance team for correction
- PC25. dispose scrap or waste material in accordance with the company policies and environmental regulations
- PC26. report to the supervisor about any problems faced or anticipated during the complete process

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1. relevant legislation, standards, policies, and procedures followed in the organization
- KU2. the basic principle of oxy-gas process and its process flow
- KU3. SOP recommended by the manufacturer for using tools, measuring instruments, accessories, gas cutting apparatus etc. during the cutting process
- KU4. various materials such as mild steel, high tensile/special steel and other appropriate metal and their properties used for gas cutting
- KU5. various forms of material used for cutting are plate, rolled section, pipe/tube, solid bars etc.
- KU6. different cutting gases used in oxy-gas cutting and their selection criteria
- KU7. various cutting operations i.e. Down-hand straight cuts (freehand), Making straight cuts (track guided), Cutting regular shapes, Cutting irregular shapes, Making angled cuts, Cutting chamfers, Making radial cuts, Gouging/flushing, Bevelled edge - weld preparations and Cutting out holes
- KU8. ISO colour codes for cutting apparatus such as gas cylinder, hoses, electric cables, etc.
- KU9. impact of various cutting parameters on the quality and quantity of output
- KU10. holding methods that are used to aid thermal cutting
- KU11. types of flames and their implication for cutting

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- KU12. various quality check parameters i.e. shape and length of the draglines, smoothness of the sides, sharpness of the top edges and amount of slag adhering to the metal
- KU13. effects of oil, grease, scale or dirt on the cutting process
- KU14. various types of cutting defects such as distortion, grooved, fluted or ragged cuts, poor draglines, rounded edges, tightly adhering slag, etc. and their remedies
- KU15. effects of oil, grease, scale or dirt on the cutting process
- KU16. emergency procedures for backfires, flashback and other fires
- KU17. safety requirements during the cutting work

Generic Skills (GS)

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

- GS1. read and interpret drawings, work instructions, equipment manuals and process documents
- GS2. communicate the welding process requirements to the supervisor and co-workers
- GS3. attentively listen and comprehend the information given by the supervisor/team members
- GS4. write any work related information in English/regional language
- GS5. recognise a workplace problem and take suitable action
- GS6. analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7. plan and organize tools, machines and consumables for carrying out welding job
- GS8. complete the assigned tasks with minimum supervision
- GS9. report to the supervisor or deal with a colleague individually, depending on the type of concern

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for cutting operations</i>	15	21	-	9
PC1. identify the cutting work to be done by interpreting the engineering drawing, Welding Procedure Specification (WPS) and job orders	1	2	-	1
PC2. identify the tools, cutting torch, machine, measuring instruments, accessories, consumables and input materials (mild carbon steel, high tensile and special steels, other materials) as per the requirements mentioned in WPS or drawing	3	2	-	2
PC3. select and arrange the right material, equipment, fixtures, accessories such as regulators, hoses and valve and consumables such as shielding gas etc. as per the SOP and job requirements	2	3	-	1
PC4. select the correct type of nozzle, consumables, gases and oxy-gas cutting equipment required for the job by following WPS and drawing	1	2	-	1
PC5. check the input material, tools, equipment and accessories for any defects, leakages and that they are as per the required quality standards	2	2	-	1
PC6. prepare the work area for cutting activities	1	2	-	-
PC7. set the oxy-gas cutting apparatus and its parameters as per the WPS and SOP	1	2	-	1
PC8. ensure that a flashback arrestor is fitted with the apparatus	1	-	-	1
PC9. use correct technique for lighting, adjusting and extinguishing the arc	1	2	-	1
PC10. adjust torch valve for type of flame such as neutral, carburizing and oxidizing	1	2	-	-
PC11. mark the correct measurements on the workpiece by using appropriate tools and measuring instruments as specified in drawing or WPS	1	2	-	-
<i>Perform oxy-gas cutting operations</i>	9	17	-	6
PC12. follow safety precautions during cutting work as per SOP and organizational guidelines	-	1	-	-
PC13. start the gas cutting machine for cutting operations	1	2	-	1

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PC14. adjust cylinder valves and regulator for operating pressure to achieve required specifications	1	2	-	1
PC15. perform oxy-gas cutting process as per SOP and produce items/cut shapes to the dimensions and profiles specified in WPS and drawing	2	4	-	1
PC16. perform various cutting operations correctly and produce thermal cuts in various forms of material (metal of 3mm and above) which meet specified quality criteria i.e. dimensional accuracy is within the tolerances specified on the drawing/specification, or within +/- 2mm; angled/radial cuts are within specification requirements; cuts are clean and smooth and free from flutes; no drags	2	4	-	2
PC17. recognize and correct burn-back and flashback	1	1	-	1
PC18. measure the final workpiece and compare with the dimensions as prescribed in the WPS and engineering drawing	1	2	-	-
PC19. shut down the cutting equipment and remove the workpiece after completion of cutting activities	1	1	-	-
<i>Perform post-cutting operations</i>	6	12	-	5
PC20. check the work pieces as per the work instructions for product quality	1	2	-	1
PC21. identify defects in the completed workpiece by using appropriate methods and equipment	2	3	-	1
PC22. separate the defective pieces which can be repaired/ reworked and pieces which are beyond repair	1	1	-	1
PC23. clean and store all the tools, machine and equipment after completion of work	1	2	-	1
PC24. check the machine operations for any malfunctions/defects in the component and immediately inform the supervisor/ maintenance team for correction	1	2	-	1
PC25. dispose scrap or waste material in accordance with the company policies and environmental regulations	-	1	-	-
PC26. report to the supervisor about any problems faced or anticipated during the complete process	-	1	-	-
NOS Total	30	50	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	CSC/N0201
NOS Name	Manually cut metal and metal alloys using oxyfuel gas
Sector	Capital Goods
Sub-Sector	<ol style="list-style-type: none"> 1. Machine Tools 2. Dies, Moulds and Press Tools 3. Plastics Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering Goods
Occupation	Manually cut metal and metal alloys using oxyfuel gas
NSQF Level	2
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
NSQC Clearance Date	

Qualification Pack

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for the Qualification Pack will be created by CGSC.
2. Performance Criteria (PC) have been assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
3. The assessment for the theory part will/may be based on knowledge bank of questions approved CGSC.
4. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
5. Assessment Agencies will create Assessor Guides comprising of Theory and Practical Assessment Set and Guidelines for each examination/training centre (as per assessment criteria below). The same will be approved by CGSC for adequacy.
6. To successfully attain Certification on the Qualification Pack, the trainee must score a minimum of 70% in each Core NOS and minimum of 50% in all non-core NOS. In addition, a candidate needs to attain a minimum overall pass percentage of 70% for certification.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CSC/N1335. Use basic health and safety practices at the workplace	30	70	-	-	100	15
CSC/N1336. Coordinate with co-workers to achieve work efficiency	30	70	-	-	100	15
CSC/N0201: Manually cut metal and metal alloys using oxy-fuel gases	30	50	-	20	100	70
Total	90	190	-	20	300	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
MMAW	Manual Metal Arc Welding
SMAW	Shielded Metal Arc Welding
WPS	Welding Procedure Speciation
IS	Indian Standards
EN	European Standards
ASME	American Society Of Mechanical Engineers
AC/ DC	Alternating Current / Direct Current
VT	Visual Testing
NDT	Non-Destructive Testing
DT	Destructive Testing
CO2	Carbon Dioxide
CPR	Cardiac Pulmonary Resuscitation
IS	Indian Standards
EN	European Standards
ASME	American Society Of Mechanical Engineers
ISO	International Organization For Standardization
PQR	Process Qualification Record

Qualification Pack

Glossary

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

Qualification Pack

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