Crusher – A42

Learning for CPCS

Outcomes

Through a combination of targeted training and experience, an individual with the crusher will be able to:

Roles and responsibilities	• Describe the nature of the sector of industry and their role and responsibilities as a plant operator
Preparing for work	• Name and explain the purpose of principal components, the basic construction, controls and terminology • Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation • Undertake all pre-use checks
Travelling and manoeuvring (mobile units)	• Configure and set for travel (mobile units) • Travel over rough, undulating ground and level surfaces • Manoeuvre in confined spaces (mobile units)
Setting up for work	• Configure and set for crushing duties to produce aggregate to specified sizes • Explain actions required for hazards, underground and overhead services
Working tasks	• Crush differing types of materials • Sort materials into graded sizes • Control and maintain the work flow rate • Use appropriate communication procedures before and during work • Explain procedures for blockages and foreign object removal
Completing work	• Clean down the machine and working area
Shutting down	• Carry out shut down and securing procedures • Explain the loading, unloading and machine disassembly procedures for machine transporting

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Syllabus

Learning outcome	Training content	
• Describe the nature of the sector of industry and their role and responsibilities as a plant operator	• Industry type • Customer / client needs • Sector contribution • Role • Reporting structures • Lifelong skills • Working practices • Social responsibilities	• Communication with colleagues / management / other trades • Health and Safety at Work Act • Environmental issues • Other trades
• Name and explain the purpose of principal components, the basic construction, controls and terminology	• Differing types • Function / applications • Power units • Drive systems • Undercarriage • Chassis / wheels / tracks	• Stability / ground pressure • Crushing components • Allied equipment (i.e. screeners) • Safety systems
• Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation	• Operator's Manual • Machine decals • Health and Safety at Work Act • PPE • Codes of Practice • Site plans / drawings	• Method statements • Environmental requirements • Risk assessments / COSHH • Inspection and reporting forms / procedures
• Undertake all pre-use checks	• Regular and non-scheduled maintenance procedures	• Sequence of pre-use checks • Defect reporting
• Configure and set for travel (mobile units)	• Travel controls • Attachments / accessories	• Travel position • Site travel • Visibility
• Travel over rough, undulating ground and level surfaces	• Travel routes • Slopes / inclines • Direction of travel • Traction / aids • Working area	• Ground conditions • Hazards • Environment protection / minimise damage
• Manoeuvre in confined spaces (mobile units)	• Visibility • Limitations of vision • Protection of ground / tight turns	• Environmental / noise / fumes • Height restrictions

Learning outcome	Training content	
• Configure and set for crushing duties to produce aggregate to specified sizes	• Required specification • Machine compatibility • Jaw / cone adjustments • Source material placing • Hazards • Start-up procedures • Machine positioning • Crushed material placing • Site markings	• Access for removing materials • Safety systems • Loading machine type, compatibility and positioning • Material segregation • Conveyers / hoppers
• Explain actions required for hazards, underground and overhead services	• Reporting procedures for damage to services • Warning / identification systems	• Types of typical services • Minimum distances and clearances
• Crush differing types of materials	• Specification • Identification of suitable and non-suitable materials • Techniques	• Loading machine • Environmental factors • Productive cycles of operation
• Sort materials into graded sizes	• Specification • Screen(s) sizing	• Discharge areas
• Control and maintain the work flow rate	• Loading machine communication • Stockpiling materials	• Power unit speeds • Productive cycles of operation
• Use appropriate communication procedures before and during work	• Types of communication	• Emergency procedures
• Explain procedures for blockages and foreign object removal	• Source material • Hazards • Techniques • Manual handling	• Emergency procedures • Manufacturers' procedures
• Clean down the machine and working area	• Environmental issues / disposal of materials • Dust / materials	• Hopper / conveyer / rollers cleared
• Carry out shut down and securing procedures	• Shut down procedures • Security	• Parking and positioning

Learning outcome	Training content	
• Explain the loading, unloading and machine disassembly procedures for machine transporting	• Compatibility • Positioning • Components	• Procedures • Security • Types of transporter

Note: The listed training content should not be considered exhaustive and subjects may be added to reflect the individuals' working environment.

Safety critical

Emphasis to be placed on the following topics:

Topic	Emphasis
• Blockages	• Manufacturer's procedures must be strictly adhered to. Machine to be isolated prior to clearing blockages
• Operator safety	• Operator secure and harnessed (as appropriate) within the work station and out of striking reach of the loading machine

Duration / Ratios

To allow effective learning, these training times are recommended for this category. Candidates must be profiled to establish learning needs. Durations should be of a length to ensure the learning outcomes are met.

Experience	Accumulated hours
• Novice operators with no industry or machine experience	28
• Novice operators with industry experience but no machine experience	21
• Operators with dissimilar (crushing) machine experience	14
• Operators with similar (crushing) machine experience	7
All candidates must have received the equivalent to 7 hours of site safety and induction training	

To allow effective learning, the listed candidate / machine / instructor ratio is the maximum recommended for this category

4 candidates : 2 machines: 1 instructor

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Resources

Practical equipment	Theory equipment
• Crusher that meets current legislation • Operator's manual for the machine • Sufficient area of ground suitable for crushing duties • Stockpiles of materials • Loading machine **PLUS** • Suitable PPE • Risk assessment for all areas where training is occurring	• PUWER 1998 Regulations • HSE GS6 • Operator's Manual • Specifications for types of crushers **PLUS** • Suitable room for theory training purposes • Welfare and rest facilities during training.

Category

Category description and types

CPCS defines a category as an item of plant or equipment used within the construction or allied industries and worked in accordance with the manufacturer's basic design. For CPCS training and assessment standards, the descriptions reflect basic core use.

To identify a machine within this category, a typical crusher would normally have the listed features and be used within the described characteristics.

Category features	Category characteristics
• Tracked or wheel mounted chassis containing the operating position; power, hydraulic and electrical units • Adjustable jaw, cone or other type of crushing device • Loading hopper and adjustable speed conveyer • Discharge conveyer or conveyers	• Tracked units can travel and steer on uneven and loose ground and slopes • Wheeled chassis units use a host vehicle to deliver to the required position • Can crush materials to a given specification with many having sorting capabilities