

Operating power presses

Overview

This standard identifies the competences you need to carry out press operations on a power press, in accordance with approved procedures. You will confirm with the press setter that the machine is ready for the operations to be performed and that all the required components/materials and consumables are available. You will be expected to produce a range of components that cover a number of different features, such as blanking, piercing, cropping, shearing, bending, forming, cupping, rolling, planishing, flattening, coining and notching, as applicable to the power press being used.

You will be required to operate the power press in line with safe working practices and approved procedures, to continuously monitor the press operations and, where necessary, make minor adjustments or seek the help of the setter to make the required adjustments, in order to ensure that the work output is to the required quality and accuracy. Meeting production targets will be an important issue, and your production records must show consistent and satisfactory performance.

Your responsibilities will require you to comply with organisational policy and procedures for the pressing activities undertaken, and to report any problems with the pressing activities that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work to instructions, with a minimum of supervision, taking personal responsibility for your actions and for the quality and accuracy of the work that you produce.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying power press procedures. You will have an understanding of the power press operations and their application, and will know about the equipment, materials and consumables in adequate depth to provide a sound background for carrying out the activities to the required specification.

You will understand the safety precautions required when working with the press, its associated tools and equipment. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

Setting up of the power press, its tooling and associated workholding devices, is the subject of another standard and is the responsibility of the press setter.

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Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. confirm that the machine is set up and ready for the machining activities to be carried out
3. operate the machine controls safely and correctly in line with operational procedures
4. produce components to the required quality and within the specified dimensional accuracy
5. carry out quality sampling checks at suitable intervals
6. deal promptly and effectively with problems within your control and report those that cannot be solved
7. complete the required production documentation
8. shut down the equipment to a safe condition on conclusion of the machining activities

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Knowledge and understanding

You need to know and understand:

1. the safe working practices and procedures to be followed whilst operating power presses
2. the safety mechanisms on the machine, and the procedure for checking that they function correctly
3. operation of the machine controls in both hand and power modes (including rapid power, where appropriate)
4. how to stop the machine in both normal and emergency situations, and the procedure for restarting after an emergency
5. the personal protective equipment (PPE) to be worn, and where this can be obtained
6. the hazards associated with operating power presses and with the operations carried out, and how to minimise them and reduce any risks
7. the importance of keeping the work area clean and tidy
8. where to obtain the component drawings, specifications and/or job instructions required for the components to be pressed
9. how to extract and use information from engineering drawings and related specifications (to include symbols and conventions to appropriate BS, ISO or BSEN standards) in relation to work undertaken
10. how to use imperial and metric systems of measurement
11. the main features of the power press being used, and the accessories that can be used
12. the various operations that can be performed on the press, and the methods and equipment used
13. how to handle and store tools safely and correctly
14. the application of lubricants to assist pressing operations
15. the effects of clamping the workpiece in a workholding device, and how this can cause distortion in the material being pressed
16. how to handle and store a components safely and correctly
17. how to recognise machining faults, and how to identify when tools need re-sharpening
18. the quality control procedures used, inspection checks to be carried out, and the equipment that will need to be used
19. the problems that can occur with the power press activities, and how these can be overcome
20. the extent of your own authority and to whom you should report if you have problems that you cannot resolve

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Scope/range related to performance criteria

1. Apply **all** of the following during the machining activities:

1. obtain and use the appropriate documentation (such as job instructions, drawings, quality control documentation)
2. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations and procedures to realise a safe system of work
3. confirm with the press setter that the press is ready for production
4. where appropriate, seek any necessary instruction/training on the operation of the press
5. ensure that the power press guards are in place and are correctly adjusted
6. ensure that materials are correctly located and positioned
7. follow the defined operating procedures and apply safe working practices and procedures at all times
8. ensure that press settings are adjusted as and when required (either by yourself or the setter) to maintain the required accuracy
9. ensure that the components produced meet the required specification for quality and accuracy
10. leave the work area and machine in a safe and appropriate condition on completion of the activities

2. Operate **one** of the following types of power press:

1. single action
2. multiple action

3. Produce pressed components which cover **four** of the following operations:

1. blanking
2. rolling
3. notching
4. piercing
5. planishing/flattening
6. forming
7. cropping/shearing
8. embossing
9. assembling
10. bending
11. coining

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12. cupping
 13. other specific operations
4. Produce components made from **one** type of material from the following:
 1. ferrous
 2. non-ferrous
 3. non-metallic
 5. Produce components within **all** the relevant quality and accuracy standards:
 1. components meet drawing, specification, template or job requirements
 2. components meet customer requirements
 3. components have the required dimensional accuracy within specified tolerances
 4. components are free from false tool marks, excessive burrs and sharp edges
 5. components are free from surface damage and deformity and have an acceptable appearance
 6. Use appropriate gauges or instruments to carry out the necessary checks, during production, for accuracy of **two** of the following:
 1. dimensions
 2. form/profile
 3. squareness
 4. security of assembled parts
 5. flatness

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