# Skills Assessment: Tool Sharpening

**Event 3 of 3**

# Trainer & Assessor Marking Guide

## Criteria

### Unit code, name and release number

MEM18001C - Use hand tools (1)

### Qualification/Course code, name and release number

MEM30205 - Certificate III in Engineering – Mechanical Trade (3)

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For queries, please contact:

IMRS SkillsPoint

Building B, Level 1

Hamilton Campus, 91 Parry St Newcastle West, NSW 2302

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This assessment can be found in the: [Learning Bank](https://share.tafensw.edu.au/share/access/searching.do?doc=%3Cxml%2F%3E&in=P7ac4831b-430a-4b8d-8b56-f7b32ed5b9cf&q=&type=standard&sort=rank&dr=AFTER)

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## Assessment instructions

Table 1 Assessment instructions

| Assessment details | Instructions |
| --- | --- |
| **Instructions for the trainer and assessor** | This is a skill-based assessment and will be assessing the student on their ability to demonstrate skills required in the unit.  This assessment is in 2 parts:   1. Practical – Tool sharpening 2. Observation Checklist   Pre assessment  The student must have successfully completed the knowledge assessment for MEM18001C prior to attempting the practical skills assessment tasks.  The student must attend a demonstration on safe operation of a bench/pedestal grinder.  The student will work through a task to sharpen a chisel and centre punch. The student is to follow the instructions on the task procedure sheets.  Assessor is to ensure the workshop is set up with all the necessary equipment for the completion of the tasks in the skills assessment.  Assessor is to ensure all tools as is specified in the task procedure sheets is available to the student prior to the commencement of assessment.  The assessor is to provide the student with the appropriate TAKE 5 risk assessment template. The student is to complete the TAKE 5 prior to commencing the task. This TAKE 5 is used to identify potential hazards and environmental issues and allow the student to implement control measures in line with workplace polices. The student is to submit the completed TAKE 5 to the assessor, prior to commencing the practical task. This requirement is not an assessable task within this assessment.  Practical Task 1  The student is required to sharpen a cold chisel and centre punch using a bench/pedestal grinder. The student will utilise their knowledge of relevant workshop equipment and practices in carrying out the sharpening of the chisel and centre punch.  The student must address all the requirements in the observation checklist and all times during the assessment comply with standard operating practices and recognised WHS practices whilst complying with any instructions or directions you give them as the assessor.  Model answers, sample responses or a criteria for the task is provided in the observation guide.  Use these to support your judgement when determining a satisfactory or unsatisfactory result.  The student’s response to each question must contain the information indicated in this marking guide in order for their response to be correct.  However, if a student provides information other than indicated below, and in the professional opinion of the assessor it is appropriate and meets the intent of the question, it may be considered correct.  Complete the Observation Checklist for each task and activity and provide the Assessment Feedback to the student. Ensure you have taken a copy of the assessment prior to it being returned to the student.  The assessment feedback comments are to be structured so as to give the student advice on the steps and actions they need to take to reach a satisfactory result when re assessed.  The Assessment feedback page must be signed by both the student and the assessor so the student displays they have received, understood and accepted the feedback.  Ensure the students name appears on the bottom of each page of the submitted assessment. |
| **About this marking guide** | The student’s response to each task or activity must contain the criteria indicated in this marking guide in order for their response to be correct.  All tasks and activities must be completed correctly in order to satisfactorily complete this assessment event.  Assessors will need to make a judgement call as to whether each response meets the criteria based upon the:   * Rules of Evidence:   + Validity – does the answer address the skill required and does the evidence reflect the four dimensions of competency?   + Sufficiency – is the task or activity sufficient in terms of length and depth?   + Currency – has the work been done so recently as to be current?   + Authenticity – is this work the student’s own authentic work? * Principles of Assessment   + Fairness – individual student’s needs are considered in the assessment process   + Flexibility – assessment is flexible to the individual student   + Validity – any assessment decision is justified, based on the evidence of performance of the student   + Reliability – evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment * Dimensions of competency   + Task skills   + Task Management Skills   + Contingency Planning Skills * (Addressed in Practical Task 1)   + Job Role Environment Skills |
| **Student must provide** | Pens, pencils, eraser, PPE |
| **Assessor must provide** | A Fitting and Machining workshop fitted with suitable workbenches and workspace  Access to SOP for use of bench grinders  Bench/pedestal grinder set up for sharpening tools  A selection of flat cold chisels in need of sharpening  A selection of centre punches in need of sharpening |
| **Due date/time allowed/venue** | TBC  1 Hour is allocated to complete this task |

## Part 1: Practical- Tool Sharpening

To complete this part of the assessment, the student is required to participate in a practical demonstration of how to complete a task or activity.

You should refer to the list of criteria provided in the Observation Checklist to understand what skills the student is required to demonstrate in this section of the assessment. This Checklist outlines the Performance Criteria, Performance Evidence and Assessment Conditions you will be marking the student on.

This practical will be observed by you, or the student can digitally record them and submit them as evidence.

The student’s responses will be used as part of the overall evidence requirements of the unit.

Once completed the student is required to submit this assessment and the tasks and activities required to be completed to you for marking.

**Contingency Management:**

While undertaking this task a number of unforeseen circumstances may arise. The assessor will have the opportunity to question each learner to gather an understanding of how the student will respond to these events. Below is a table with examples of possible questions and acceptable responses.

The assessor has the opportunity in the observation checklist to record relevant questions and responses in the table ***“Part 2 - Table2 Additional Questions”***

Table 4 Unforeseen Circumstances

|  |  |  |
| --- | --- | --- |
| Scenario | Assessors question | Acceptable students response |
| Power failure in workshop | What is the correct action in the case of power failure? | *Notify assessor of failure.*  *Move to safe location* |
| Bench/Pedestal grinder failure | What do you need to do if the bench/pedestal grinder fails and prevents you from carrying out the tool sharpening task? | *Notify assessor of failure*  *Arrange access to alternative bench/pedestal grinder* |
| Emergency evacuation | What do you do if an emergency evacuation drill happens during the assessment? | *Follow standard emergency evacuation procedure* |

**Task 1: Sharpen chisel and centre punch**

Task 1 consists of three (3) steps as described below:

**Step 1:**

You are required to attend a teacher demonstration on how to safely operate a bench/pedestal grinder to sharpen chisels and centre punches on the bench/pedestal grinder.

**Step 2:**

Refer to the SOP for bench/pedestal grinders and complete the information for ***Table 1: Safely sharpen chisel and centre punch on bench/pedestal grinder.***

**Step 3:**

* Sharpen a cold chisel to a point angle of 60 degrees
* Sharpen a centre punch to a point angle of 90 degrees
* A tool gauge is to be used to measure correct point angles for each tool
* Cutting edges on the chisel and point of the centre punch must be sharp without signs of overheating.

Simulated Environment Conditions

***Note: The assessor may direct the student to use different equipment in different spaces to ensure competency is applied in new and different situations.***

The assessment is to be carried out in the workshop complying with all WHS requirements and compliance with Standard Operating Procedures.

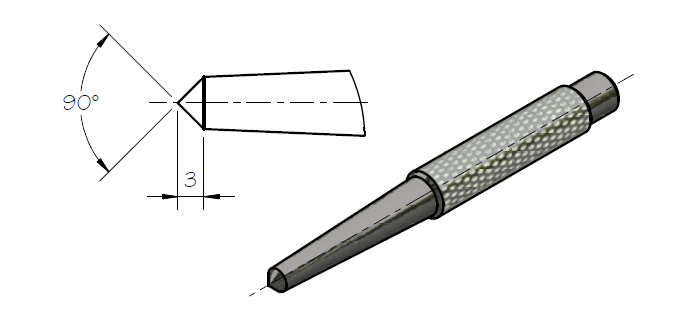
The assessment should take approximately 1 Hours.

**Table 1: Safely sharpen chisel and centre punch on bench/pedestal grinder**

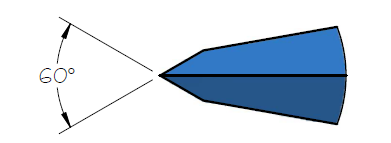
Complete the following table listing 10 items that can be found in the Standard Operating Procedure (SOP) for operating a bench/pedestal grinder to sharpen a chisel and centre punch ***(Student can source information from documentation)***

|  |  |
| --- | --- |
| Item # | Safely sharpen Chisel and centre pop on bench grinder |
| *1* | *Eye, hearing, foot and clothing protection must be worn* |
| *2* | *Gloves must not be worn when operating this equipment* |
| *3* | *Hair must be covered or restrained* |
| *4* | *Know where the emergency stop equipment is* |
| *5* | *Ensure power is off before proceeding with safety checks* |
| *6* | *Check leads and switches for damage before use* |
| *7* | *Check grinding wheel and machine for damage* |
| *8* | *Adjust guides to as close as possible to wheel. Tool rest max gap 1mm* |
| *9* | *Beware of other people in the immediate vicinity* |
| *10* | *Ensure work area and grinding wheel is clear before use* |
| *11* | *After all checks have been made turn on main power* |
| *12* | *Keep hands clear of moving components and machinery* |
| *13* | *Do not stand in front of wheel when starting equipment* |
| *14* | *Move job across wheel to even the wear on the grinding wheel, keep job cool with water* |
| *15* | *Do not overload the motor* |
| *16* | *Turn off and isolate power supply immediately when finished* |
| *17* | *Never leave running machine unattended* |
| *18* | *Gloves must not be worn when operating this equipment* |

Centre punch



Flat cold chisel



Task 1: Tool sharpening specifications

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Quantity | Tool | Cutting Angle | Finish | Tolerance |
| 1 | Flat Cold chisel | 60 degrees | Cutting edge to be square even and uniform | +/- 3 degrees |
| 1 | Centre Punch | 90 degrees | Point angle to be even and centred | +/- 3 degrees |

**Part 2: Observation Checklist –** Tool sharpening

The Observation Checklist will be used by the assessor to mark the students’ performance in the practical tasks. Use this Checklist to understand what skills the student needs to demonstrate to prepare materials and equipment for sharpening tools. The Checklist provides the assessment criteria used to determine whether the student has successfully completed this assessment event. All the criteria must be met. The students’ demonstration will be used as part of the overall evidence requirements of the unit. The assessor may ask questions while the demonstration is taking place or if appropriate directly after the task/activity has been completed. These questions and responses are to be documented in the “***Table 2*** ***Additional Questions”*** table following the observation checklists

Table 2 Observation Checklist

| Item # | | Task requirements | S | U/S | Assessor Comments (Describe the student’s ability in demonstrating the required skills and knowledge) |
| --- | --- | --- | --- | --- | --- |
| 1  (RS2) | Attend demonstration on safe use of bench/pedestal grinders and follow verbal instructions | |  |  | Student attends demonstration and follows verbal instructions  *(a list of verbal questions and responses can be noted in Table 3 additional questions following the observation checklist)*  *Student answered verbal questions correctly when asked*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |
| 2  (RS1)  (PC1.3) | Locate and refer to SOP for safe use of bench/pedestal grinders. Complete the information in:  Table 1: Safely sharpen chisel and centre punch on bench/pedestal grinder | |  |  | Student refers to SOP and completes Table 1: Safely sharpen chisel and centre punch on bench/pedestal grinder.  *Student locates correct SOP and refers to it to complete Table 1: Safely sharpen chisel and centre punch on bench grinder*  *Students responses in table are correct as per marking guide*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |
| 3  (RS1)  (PC1.3, PC1.4) | Follow Standard Operating Procedures (SOP) to operate a bench/pedestal grinder to sharpen tools correctly.   * Wear correct PPE suitable for task * Carry out before use checks * Follow safe practices and housekeeping * Carry out after use checks | |  |  | Student follows SOP at all times prior to, during and after using bench/pedestal grinder  *Student wearing correct PPE*  *Ensure work area and grinder are clear before use*  *Student locates the emergency stop button*  *Checks the condition of leads and switches for damage*  *Checks grinding wheel and machine for damage*  *Any damage is identified and marked for repair*  *Checks/Adjusts tool rest clearance – Maximum gap 1mm*  *Stood to side of bench grinder when starting*  *Kept hands clear of rotating wheel*  *Student Isolate power on completion of grinding operations*  *Student cleaned area around bench grinder to remove any grinding grit.*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |
| 4  (RS3)  (PC1.1) | Source the flat cold chisel and centre punch for tool sharpening task. | |  |  | Student sources the chisel and centre punch for the Task  *Student uses appropriate communication as required to assist in locating equipment*  *The chisel and centre punch chosen must be in need of sharpening*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |
| 5  (RS6)  (PC1.2, PC1.5) | Sharpen flat cold chisel are per specification | |  |  | Student sharpens the flat cold chisel as per specifications  *Cutting angle of 60 degrees*  *Cutting angle face is square*  *Cutting angle is uniform*  *Chisel head free of mushrooming*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |
| 6  (RS6)  (PC1.2, PC1.5) | Sharpen centre punch as per specification | |  |  | Student sharpens the centre punch as per specifications  *Point angle of 90 degrees*  *Point angle grinding is uniform angle*  *Point angle is on centre (sharpened pointing up the wheel)*  *Centre punch head free of mushrooming*  *Assessor’s comments/responses noting where student has not achieved a satisfactory result and what is needed to gain a satisfactory outcome.* |

Table 2 Additional Questions

|  |
| --- |
| Additional Questions |
| Assessors may ask additional questions to clarify student understanding. List here any additional questions that were asked during this assessment event.  *Record all additional questions that were asked of the student during the assessment event.* |
| **Student Reponses to Additional Questions** |
| List here the student responses to any additional questions that were asked during this assessment event.  *Record the student responses to any additional questions that were asked during this assessment event.* |