

# DIES AND MOULDS MAKER



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## ASSESSMENT PACKAGE

National Vocational Certificate Level 2

Version 1 - August, 2019

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**Document Version**

August, 2019  
Islamabad, Pakistan

# DIES AND MOULDS MAKER



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**ASSESSMENT PACKAGE**  
National Vocational Certificate Level 2

Version 1 - August, 2019

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	<b>CS Code:</b> 071500966	<b>Level:</b> 2	<b>Version:</b>
<b>Competency Standard Title:</b> Perform bench work	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (4 hours) (for practical demonstration &amp; assessment):</b></p> <ol style="list-style-type: none"> <li><b>Assessment Task 1:</b> Perform sawing and filing as per drawing given in Annex A</li> <li><b>Assessment Task 2:</b> Perform hand tapping, counter sinking and counter boring as per given drawing in Annex A</li> </ol> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Perform sawing and filing as per drawing given in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform sawing and filing operation as per given drawing</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p>
	<p><b>Assessment Task 2:</b> Perform hand tapping, counter sinking and counter boring as per given drawing in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform hand tapping operation as per given drawing</p> <p>Performance Criteria 4: Perform counter boring operation as per given drawing</p> <p>Performance Criteria 5: Perform counter sinking operation as per given drawing</p> <p>Performance Criteria 6: Maintain housekeeping after completion of task</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit note book or practical activity evidence, completed during this specific module, for relevant activity with drawing/illustration.</p>

*Continued on following page*

**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

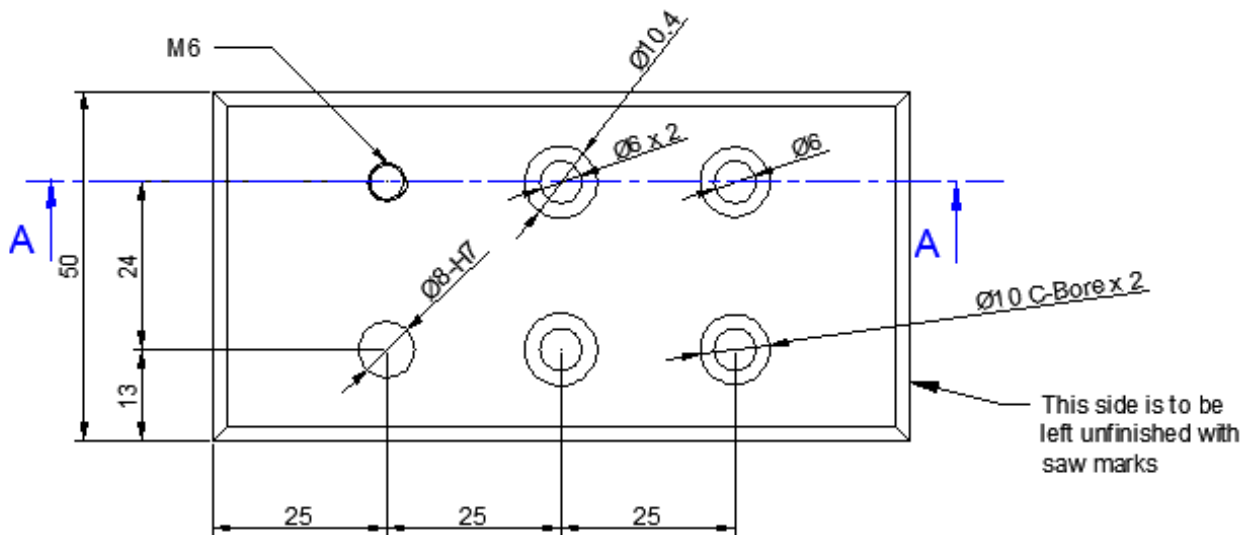
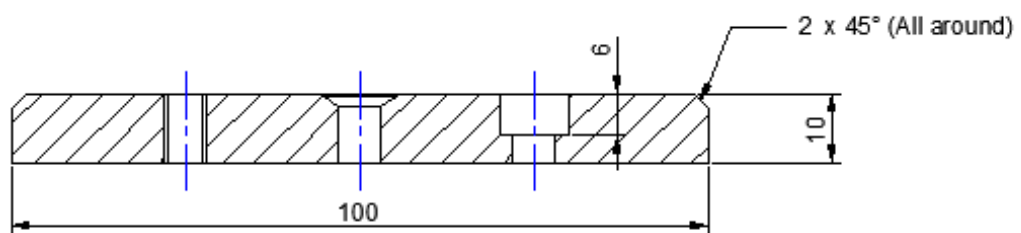
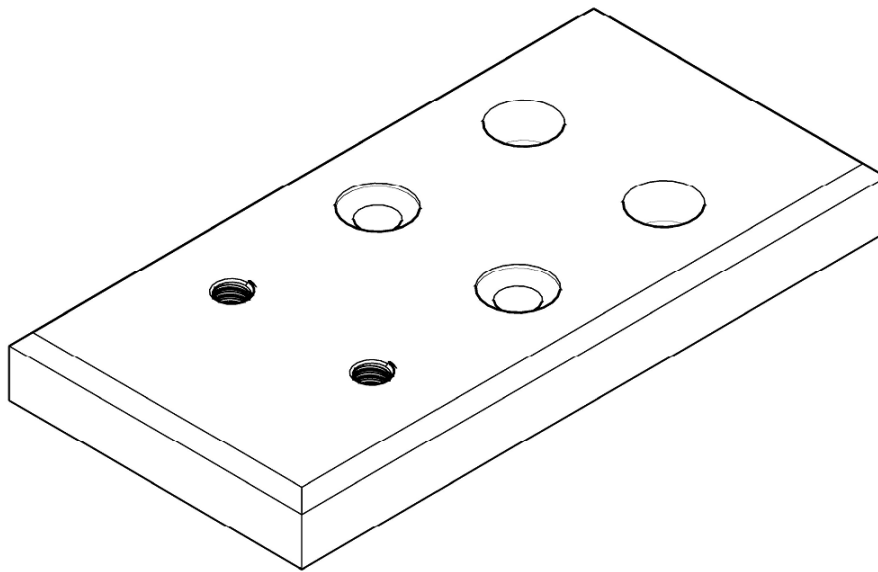
Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Perform sawing and filing as per drawing given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed sawing and filing operation as per given drawing			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Perform hand tapping, counter sinking and counter boring as per drawing given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance Criteria 3: Performed hand tapping operation as per given drawing			
4	Performance Criteria 4: Performed counter boring operation as per given drawing			
5	Performance Criteria 5: Performed counter sinking operation as per given drawing			
6	Performance Criteria 6: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1: Submitted log book or activity record (practical evidence, project, pictures etc.) completed during the training			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Annexure – A



**Note:**  
General Tolerance =  $\pm 0.1$   
All dimensions are in mm

ok

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	<b>CS Code:</b> 071500966	<b>Level:</b> 2	<b>Version:</b>
<b>Competency Standard Title:</b> Perform bench work	<b>Assessment Date (DD/MM/YY):</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages correctly.</b>
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**Assessors Guide** (to be completed by the assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: Signature of the Assessor:.....



<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Perform bench work	<b>Assessment Date (DD/MM/YY):</b>		

### WRITTEN ASSESSMENT

Question	Candidate's answer
1. What is meant by the term "TPI" in hacksaw blade	<b>Teeth per inch</b>
2. Write down five steps for drilling	<ol style="list-style-type: none"> <li>1. Marking</li> <li>2. Center Punch</li> <li>3. Pilot drilling</li> <li>4. Final drilling</li> <li>5. Burr removing</li> </ol>
3. One inch is equivalent to how many millimeters?	a) 20 mm b) 24.5mm c) 25.0mm <b>d) 25.4mm</b>
4. Which of the following is a precision instrument?	a) ruler b) steel tape c) tri-square <b>d) micrometer</b>
5. How hammers are classified? Give three examples.	<ul style="list-style-type: none"> <li>• <b>By weight</b></li> <li>• <b>By shape</b></li> <li>• <b>By material</b></li> </ul>
6. In which direction hand reamer should be used?	Clock wise direction only
7. When sawing on metal, in which direction pressure will be applied?	Only during forward stroke

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code: 071500967	Level: 2	Version:
<b>Competency Standard Title:</b> Perform Lathe Operations	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (6 hours) (for practical demonstration &amp; assessment):</b></p> <ol style="list-style-type: none"> <li><b>Assessment Task 1:</b> Perform facing &amp; turning as per drawing 1 given in Annex A</li> <li><b>Assessment Task 2:</b> Perform thread cutting &amp; boring as per drawing 2 given in Annex A</li> </ol> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Perform facing &amp; turning as per drawing 1 given in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform facing, turning in a metal work piece according to given task drawing</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p> <p><b>Assessment Task 2:</b> Perform thread cutting &amp; boring as per drawing 1 given in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform thread cutting &amp; boring in a metal work piece according to given drawing</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p> <p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit logbook or practical evidence, completed during this specific module, for relevant activity with drawing/illustration.</p>

*Continued on following page*

**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

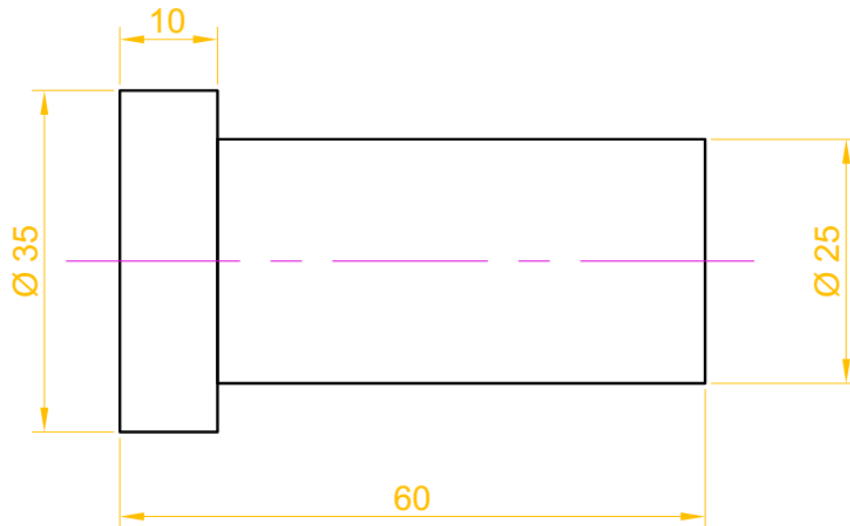
Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Perform facing & turning as per drawing 1 given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task.			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed facing & turning as per drawing 1 given in Annex A			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Perform thread cutting & boring as per drawing 2 given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task.			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: : Performed thread cutting & boring as per drawing 2 given in Annex A			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

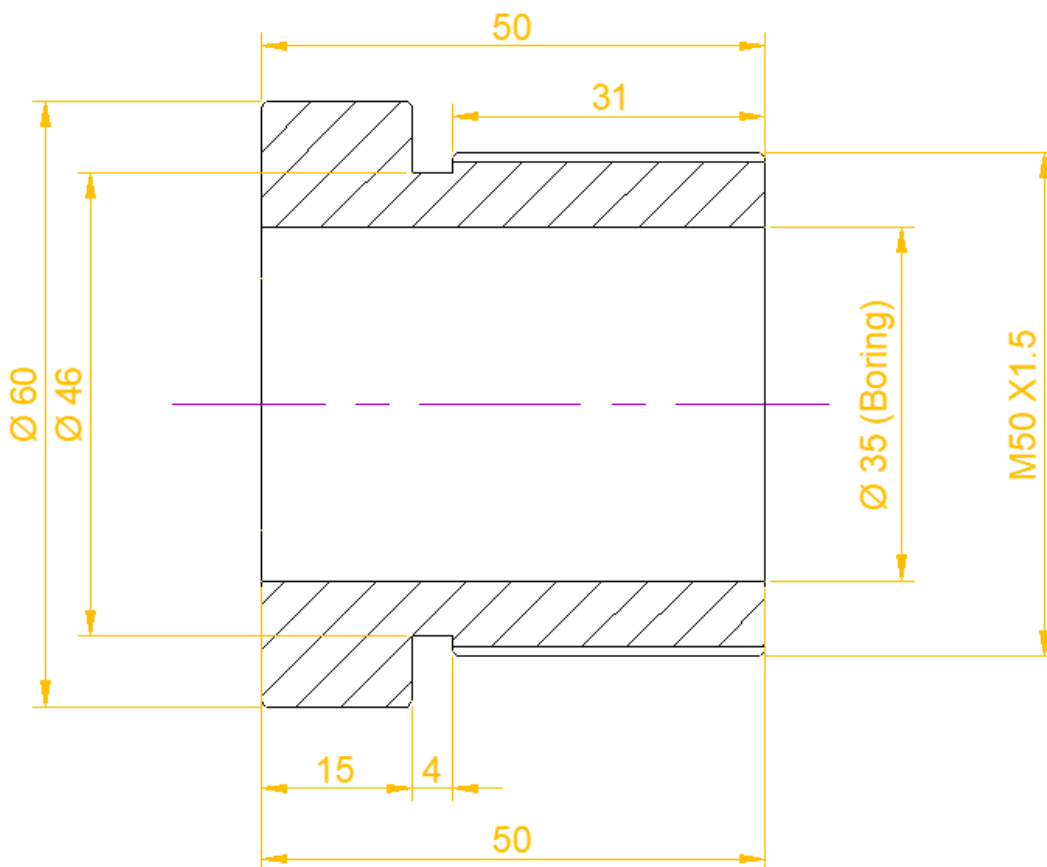
Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1 Submitted log book or activity record (practical evidence, project, pictures etc.) completed during the training.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Annex A



Drawing 1

Note: General tolerance  $\pm 0.1$   
All dimensions are in mm



Drawing 2

Note: General tolerance  $\pm 0.1$   
All dimensions are in mm

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code: 071500967	Level: 2	Version:
<b>Competency Standard Title:</b> Perform lathe operations	<b>Assessment Date (DD/MM/YY):</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages correctly.</b>
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**Assessors Guide** (to be completed by the assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: Signature of the Assessor:.....

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Perform lathe operations	<b>Assessment Date (DD/MM/YY):</b>		

### WRITTEN ASSESSMENT

Question	Candidate's answer
8. What is meant by the term "RPM" in lathing	<b>Revolution Per Minutes</b>
9. Write down at least 5 steps for facing	<b>6. Holding the work Piece Properly</b> <b>7. Hold cutting Tool</b> <b>8. Center the cutting tool</b> <b>9. Set the Machine RPM</b> <b>10. Complete Facing</b> <b>11. Chamfering</b>
10. 38.1 mmm is equivalent to how many inches?	a) 1"    b) 2" <b>b) 1 1/2"</b> d) 3/4"
11. Which of the following is a precision instrument?	a) ruler    b) steel tape c) tri-square <b>d) Vernier caliper</b>
12. What is the tool direction on a lathe ?	<b>Against the work piece</b>
13. What is the cutting speed?	<b>The speed at which work moves with respect to the tool</b>

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code: 071500968	Level: 2	Version:
<b>Competency Standard Title:</b> Perform milling operations	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (04 hours) (for practical demonstration &amp; assessment):</b></p> <ol style="list-style-type: none"> <li><b>Assessment Task 1:</b> Produce a rectangular work piece with parallelism as per given drawing in annexure-A</li> <li><b>Assessment Task 2:</b> Perform pocketing operation as per given drawing in annexure-A</li> </ol> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (written or oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Produce a rectangular work piece with parallelism as per given drawing in annexure-A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform milling machine operations to produce work piece as per given drawing</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p> <p><b>Assessment Task 2:</b> Perform pocketing operation as per given drawing in annexure-A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform pocketing as per given drawing</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p> <p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit notebook or practical evidence, completed during this specific module, for relevant activity with drawing/illustration.</p>

*Continued on following page*



**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

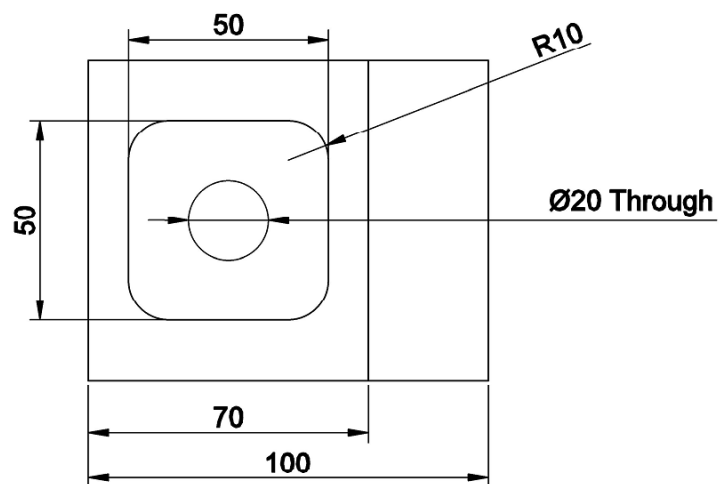
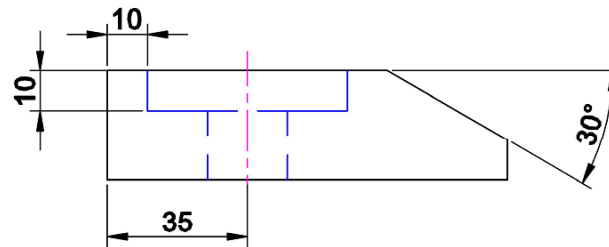
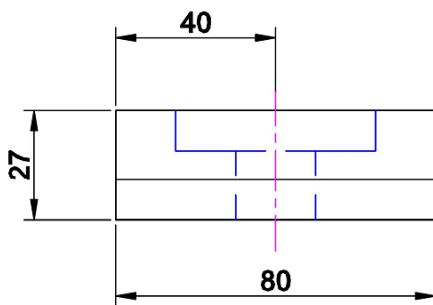
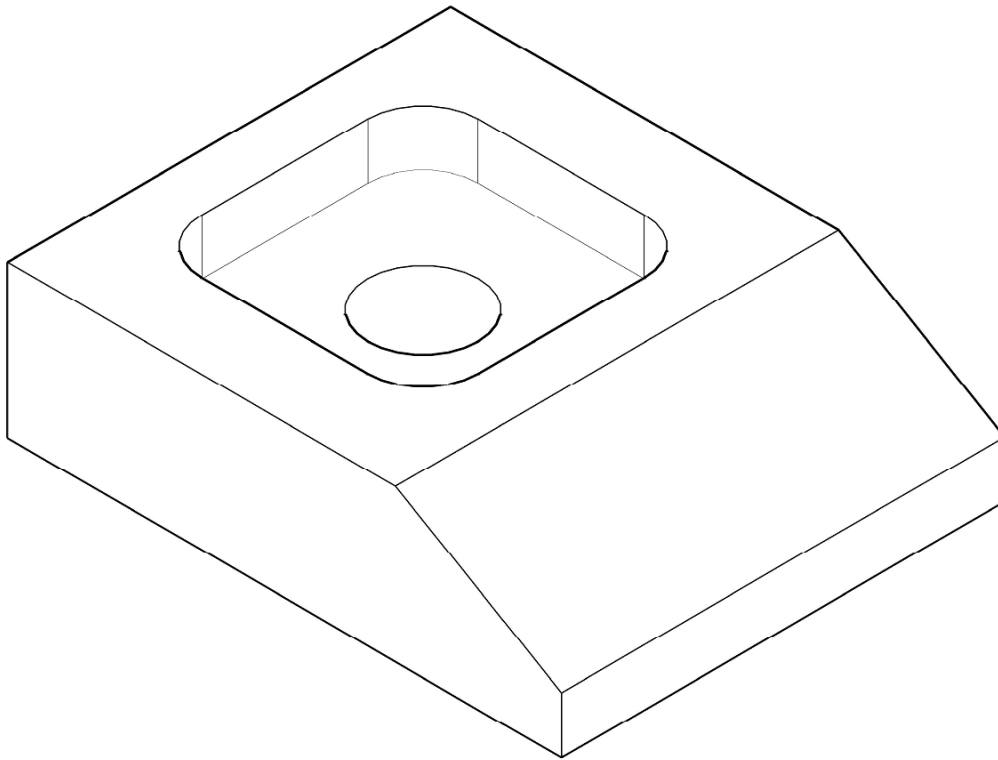
Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Produce a rectangular work piece with parallelism as per given drawing		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed milling machine operations to produce work piece as per given drawing			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Perform pocketing operation as per given drawing		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed pocketing as per given drawing			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1: Submitted log book or activity record (practical evidence, project, pictures etc.) completed during the training.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Annexure - A



**Note:**  
General Tolerance =  $\pm 0.1$   
All dimensions are in mm

Perform drilling before pocketing

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	<b>CS Code:</b> 071500968	<b>Level:</b> 2	<b>Version:</b>
<b>Competency Standard Title:</b> Perform milling operations	<b>Assessment Date (DD/MM/YY):</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages correctly.</b>
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**Assessors Guide** (to be completed by the assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number:  Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/>  Name of the Assessor: ..... Assessor's code:  Signature of the Assessor:.....

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Perform milling operations	<b>Assessment Date (DD/MM/YY):</b>		

### WRITTEN ASSESSMENT

Question	Candidate's answer
14. Name any two types of milling cutters	<ul style="list-style-type: none"> <li>• End mill cutter</li> <li>• Shell end mill cutter</li> <li>• Face mill cutter</li> <li>• Slot cutter</li> <li>• Profile cutter</li> </ul>
15. Which of the following is not a milling method?	a) Conventional milling <b>b) Cross sectional milling</b> c) Climb milling d) None of the above
16. Name the materials used for milling cutters.	Milling cutters are generally made of high speed steel or sintered carbides.
17. Why is coolant used during milling operation?	a) To increase speed of machining b) To protect job from rust c) To protect work piece from atmosphere <b>d) To reduce heat during cutting operation</b>
18. Name two types of milling machines.	Horizontal milling machine Vertical milling machine Copy milling machine Column type milling machine Universal milling machine Bench type milling machine

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code: 071500969	Level: 2	Version:
<b>Competency Standard Title:</b> Perform grinding operations	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (2 hours) (for practical demonstration &amp; assessment):</b></p> <ol style="list-style-type: none"> <li><b>Assessment Task 1:</b> Perform surface grinding as per drawing 1 given in Annex A</li> <li><b>Assessment Task 2:</b> Perform cylindrical grinding as per drawing 2 given in Annex A</li> </ol> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (written or oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Perform surface grinding as per drawing 1 given in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform surface grinding operation as per drawing 1 given in Annex A</p> <p>Performance Criteria 4: Maintain housekeeping after completion of task</p>
	<p><b>Assessment Task 2:</b> Perform cylindrical grinding as per drawing 2 given in Annex A</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform cylindrical grinding operation as per drawing 2 given in Annex A</p> <p>Performance Criteria 4: Maintain housekeeping and clean the workstation after completion of task.</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit note book or practical evidence, completed during this specific module, for relevant activity with drawing/illustration.</p>

*Continued on following page*

**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1 Perform surface grinding as per drawing 1 given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed surface grinding as per drawing 1 given in Annex A			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

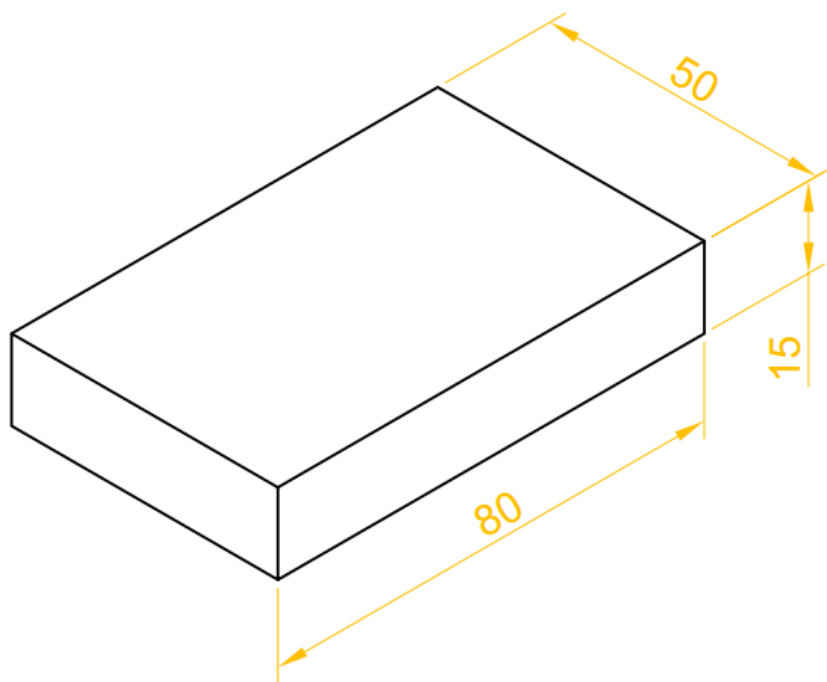
Assessment Task 2		Description of assessment task 2 Perform surface grinding as per drawing 2 given in Annex A		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance criteria 2: Selected tools and equipment for the given task			
3	Performance criteria 3: Performed cylindrical Grinding & be able to maintain parallelism			
4	Performance Criteria 4: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1 for the evaluation of portfolio: Submitted log book or activity record (practical evidence, project, pictures etc.) completed during the training.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		



## Annex A

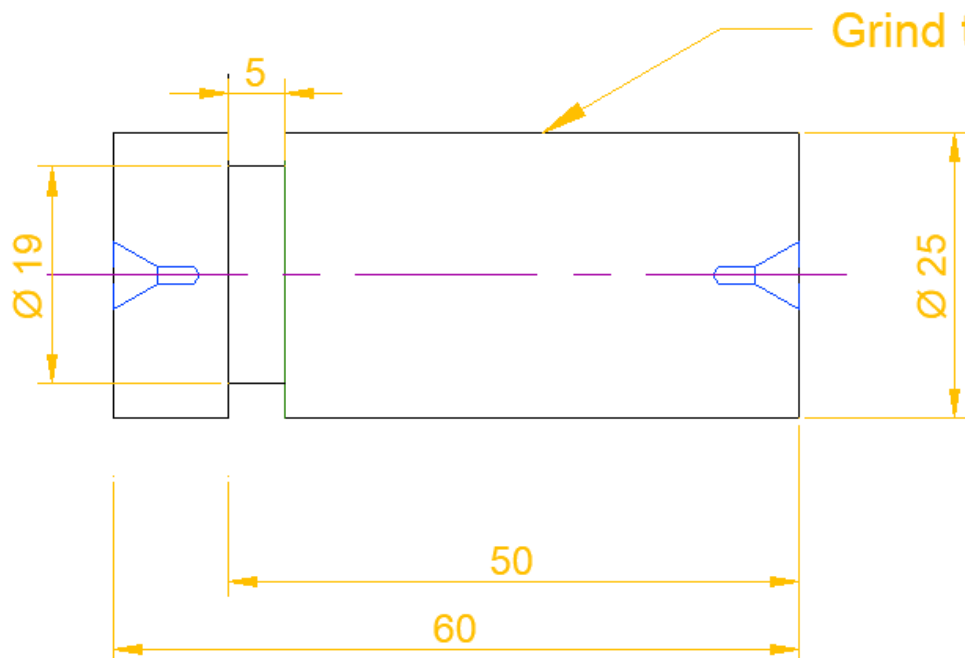
Drawing 1



Note: Grinding tolerance  $\pm 0.02$   
All dimensions are in mm  
Maintain parallelism // 0.03

Grind this surface

Drawing 2



<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code: 071500969	Level: 2	Version:
<b>Competency Standard Title:</b> Perform grinding operations	<b>Assessment Date (DD/MM/YY):</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages correctly.</b>
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**Assessors Guide** (to be completed by the assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: Signature of the Assessor:.....

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Perform grinding operations	<b>Assessment Date (DD/MM/YY):</b>		

### WRITTEN ASSESSMENT

Question	Candidate's answer
19. The grinding operation is a...	(A) Shaping operation (B) Forming operation (C) <b>Surface finishing operation</b> (D) Dressing operation
20. Grinding wheels should be tested for balance	(A) Only at the time of manufacture (B) Before starting the grinding operation (C) At the end of grinding operation (D) <b>Occasionally</b>
21. In grinding irregular, curved, tapered, convex and concave surfaces, the grinder used is called	(A) Cylindrical grinder (B) Internal grinder (C) <b>Surface grinder</b> (D) Tool and cutter grinder
22. Grinding is the process of removing material by _____ action.	(A) <b>Rubbing</b> (B) Cutting (C) Polishing (D) Wearing
23. After dressing a wheel it may be necessary to adjust the _____.	(A) <b>Guard</b> (B) Eye shield (C) Tool rest (D) All of above
24. Jobs rotate in...?	(A) <b>Cylindrical grinder</b> (B) Internal grinder (C) Surface grinder (D) Tool and cutter grinder

<b>Title of Qualification:</b> National Vocational Certificate level 2, In Dies and Molds Maker	CS Code:	Level: 2	Version: 1
<b>Competency Standard Title:</b> <b>Integrated Assessment Level-2</b>	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (4 hours) (for practical demonstration &amp; assessment):</b></p> <p>5. <b>Assessment Task 1:</b> Perform milling and lathe operations and produce internal threads using hand tap according to given drawing in Annexure-1</p> <p><b>And complete:</b></p> <p>6. <b>Knowledge assessment test (written or oral)</b></p> <p>7. <b>Portfolios at the time of assessment (if any)</b></p>
/Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Perform milling and lathe operations and produce internal threads using hand tap according to given drawing in Annexure-1</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform facing &amp; turning according to given drawing using lathe machine</p> <p>Performance Criteria 4: Produce chamfer as specified in drawing using lathe machine</p> <p>Performance Criteria 5: Produce hole for the tapping using lathe machine</p> <p>Performance Criteria 6: Perform milling operation to cut flat surfaces as per given drawing</p> <p>Performance Criteria 7: Produce internal threads using hand tap.</p> <p>Performance Criteria 8: Maintain housekeeping after completion of task</p> <p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit record of all completed formative assessments. S/he must be competent in all formative assessments</p>

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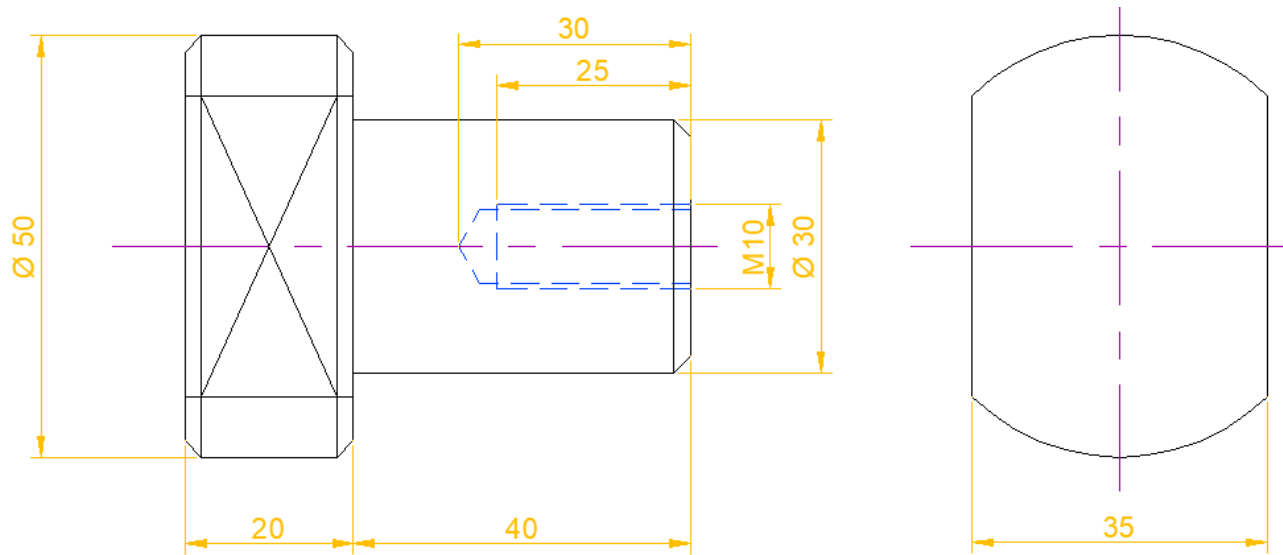
**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			
Each Assessment Task (with performance criteria)							
Assessment Task 1			Description of assessment task 1 Perform milling and lathe operations and produce internal threads using hand tap according to the drawing.				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks
1	Performance Criteria 1: Applied relevant health and safety requirements during completion of task						
2	Performance Criteria 2: Selected tools and equipment for the given task						
3	Performance Criteria 3: Performed facing & turning according to given drawing using lathe machine						
4	Performance Criteria 4: Produced chamfer as specified in drawing using lathe machine						
5	Performance Criteria 5: Produced hole for the tapping using lathe machine						
6	Performance Criteria 6: Performed milling operation to cut flat surfaces as per given drawing						
7	Performance Criteria 7: Produced internal threads using hand tap.						
8	Performance Criteria 8: Maintained housekeeping after completion of task						
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>				

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1 for the evaluation of portfolio: Submitted record of all completed formative assessments. S/he must be competent in all formative assessments.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Annexure-1



Sample Drawing

**Note: General tolerance  $\pm 0.1$**

**All dimensions are in mm**

**All chamfer are 2 x 45° unless specified**

<b>Title of Qualification:</b> National Vocational Certificate level 2, In Dies and Molds Maker	CS Code:	Level: 2	Version: 1
<b>Competency Standard Title:</b> <b>Integrated Assessment Level-2</b>	<b>Assessment Date (DD/MM/YY):</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (4 hours) (for practical demonstration &amp; assessment):</b></p> <p>8. <b>Assessment Task 1:</b> Perform milling and lathe operations and produce internal threads using hand tap according to given drawing in Annexure-1</p> <p><b>And complete:</b></p> <p>9. <b>Knowledge assessment test (written or oral)</b></p> <p>10. <b>Portfolios at the time of assessment (if any)</b></p>
/Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1:</b> Perform milling and lathe operations and produce internal threads using hand tap according to given drawing in Annexure-1</p> <p>Performance Criteria 1: Apply relevant health and safety requirements during completion of task</p> <p>Performance Criteria 2: Select tools and equipment for the given task</p> <p>Performance Criteria 3: Perform facing &amp; turning according to given drawing using lathe machine</p> <p>Performance Criteria 4: Produce chamfer as specified in drawing using lathe machine</p> <p>Performance Criteria 5: Produce hole for the tapping using lathe machine</p> <p>Performance Criteria 6: Perform milling operation to cut flat surfaces as per given drawing</p> <p>Performance Criteria 7: Produce internal threads using hand tap.</p> <p>Performance Criteria 8: Maintain housekeeping after completion of task</p> <p><b>Portfolios required at the time of assessment (if any) for</b></p> <p>Performance criteria 1 for the evaluation of portfolio: Submit record of all completed formative assessments. S/he must be competent in all formative assessments</p>

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**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

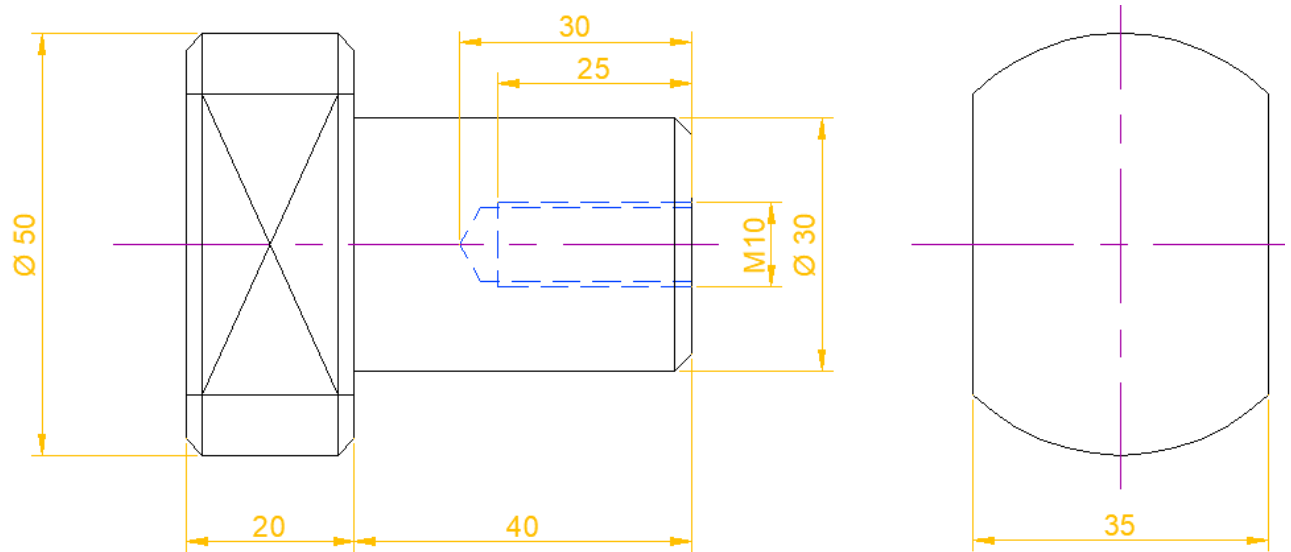
Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			
Each Assessment Task (with performance criteria)							

Assessment Task 1		Description of assessment task 1 Perform milling and lathe operations and produce internal threads using hand tap according to the drawing.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance Criteria 1: Applied relevant health and safety requirements during completion of task			
2	Performance Criteria 2: Selected tools and equipment for the given task			
3	Performance Criteria 3: Performed facing & turning according to given drawing using lathe machine			
4	Performance Criteria 4: Produced chamfer as specified in drawing using lathe machine			
5	Performance Criteria 5: Produced hole for the tapping using lathe machine			
6	Performance Criteria 6: Performed milling operation to cut flat surfaces as per given drawing			
7	Performance Criteria 7: Produced internal threads using hand tap.			
8	Performance Criteria 8: Maintained housekeeping after completion of task			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio		
Current <input type="checkbox"/> Sufficient <input type="checkbox"/> Authentic <input type="checkbox"/> Valid <input type="checkbox"/> Reliable <input type="checkbox"/>				
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1 for the evaluation of portfolio: Submitted record of all completed formative assessments. S/he must be competent in all formative assessments.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Annexure-1



Sample Drawing

Note: General tolerance  $\pm 0.1$   
All dimensions are in mm  
All chamfer are  $2 \times 45^\circ$  unless specified

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Integrated Assessment Lev-2	<b>Assessment Date (DD/MM/YY):</b>		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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**Assessors Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor:.....

<b>Title of Qualification:</b> National Vocational Certificate In Dies and Molds Maker	CS Code:	Level: 2	Version:
<b>Competency Standard Title:</b> Integrated Assessment Lev-2	<b>Assessment Date (DD/MM/YY):</b>		

### WRITTEN ASSESSMENT

Question	Candidate's answer
25. How do we categorize the files?	<b>Files are specified by:</b> <b>Shape</b> <b>Size (Length)</b> <b>Cut</b> <b>Coarseness</b>
26. Describe types of twisted drills	<b>Straight shank</b> <b>Taper Shank</b> <b>Carbide tip drill</b>
27. What type of tapper is used in machine spindle to hold drill chuck?	<b>Morse tapper</b>
28. Write any two types of milling cutters?	1. <b>End mill</b> 2. <b>Shell end mill</b> 3. <b>Face mill</b> 4. <b>Slitting saw</b> 5. <b>Profile cutter</b>
29. Write any two types of milling machine	<b>Vertical milling machine</b> <b>Horizontal milling machine</b> <b>Copy milling machine</b> <b>CNC milling machine</b>
30. Write any three types of lathe machines	<b>Tool room lathe</b> <b>Auto lathe</b> <b>Turret lathe</b> <b>Capstan lathe</b> <b>Vertical lathe</b>

Question	Candidate's answer
31. Why the coolant is used in a machining process	<b>To reduce the heat generation</b>
32. To show hidden profiles in a drawing, what type of line is used?	<b>Dash line</b>
33. To show visible profiles in a drawing, what type of line is used?	<b>Object line or continue thick line</b>
34. What is the angle of Metric threads	<b>60 degrees</b>
35. What is meant by the pitch of thread	<b>The root to root OR peek to peek distance of a thread is known as pitch of thread.</b>

