

5: Lathe Training Video Worksheets

Video # 1: Machine Shop 8 – Lathe 1 (42:37)

<http://techtv.mit.edu/genres/24-how-to/videos/144-machine-shop-8>

- Components & Setup

- List the components of the lathe: _____

- What component supplies power to the machine? _____
- To support long pieces, which component is used? _____
- What rides on the bed of the lathe? _____
- *Note: Power feed systems different on lab lathes*

- Turning Tools

- How are lathe tools held? _____

- What does knurling do? _____

- What tool has a long thin blade to cut off pieces from stock? _____

- Turning and facing

- Before removing chips, always do what? _____

- After a roughing pass, what is performed? _____
- What does breaking an edge mean? _____

- Which produces a smoother finish: Rough pass or finishing pass? _____

- Which produces a smoother finish: Manual or automatic feed? _____

- Cutting off a part:
 - o What tool is used for this operation? _____
 - o At what angle does this tool need to be? _____
 - o Where should the tip of the tool be? _____
 - _____
 - o Can deep cuts be performed 'dry'? _____
- Drilling
 - o What should be checked before drilling? _____
 - _____
 - o Where is the drill chuck inserted? _____
 - o How do you start drilling a hole? _____
 - o How much material should be removed at once? _____
 - _____

Honor Pledge: *I watched this video fully focused and without distraction. No answers were dishonestly obtained. Signed: _____ Date: _____*

Video # 2: Machine Shop 9 – Lathe 2 (47:02)

<http://techtv.mit.edu/genres/24-how-to/videos/134-machine-shop-9>

- Tapping
 - o What does tapping a hole do? _____
 - _____
 - o What tool can be used to support the back of the tap handle? _____
 - _____
 - o Can most materials be tapped dry? _____
- Boring
 - o What tool is used for this operation? _____
 - o Should manual feed be used for boring holes? _____
 - _____
- Knurling

- Does this setup need to be precise? _____
 - Should the face of the knurler be square to the part? _____
 - Do both wheels need to come in contact with the part? _____
 - Should you come in fast or slow to the part? _____
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- Cutting Tapers
 - Is the same tool used for turning as for this operation? _____
 - What component of the lathe is used? _____
 - Turning shafts
 - Why is turning shafts special? _____
 - What tool is used to alleviate this problem? _____
 - How should the hole for this be milled? _____
 - Single Point Thread Turning
 - What is the angle on this tool? _____
 - Should this tool be perpendicular to the material? _____
 - *Note: Thread controls differ per machine*
 - At what angle should the compound be set? _____

Honor Pledge: *I watched this video fully focused and without distraction. No answers were dishonestly obtained. Signed: _____ Date: _____*

Video # 3: Machine Shop 10 – Lathe 3 (29:31)

<http://techtv.mit.edu/genres/24-how-to/videos/172-machine-shop-10>

- Lathe Chuck
 - Is it easy to hold a piece with a large hole in the chuck? _____
 - If it doesn't have a hole and the piece is too big to fit in the chuck, how can the piece be held? _____
- Lathe Arbors

- What does allow for? _____

- Describe a lathe arbor: _____

- For low aspect ratio parts, what should be made? _____

- Turning between centers
 - What is used to react to the cutting torque? _____

 - Should a dead or live -center be used on the tailstock? _____

- Face plates
 - What is put in the T-slots to mount the part to the face plate? _____

 - Is this safe? _____

 - For thin materials, how should the material be affixed to the face plate? _____

Honor Pledge: *I watched this video fully focused and without distraction. No answers were dishonestly obtained. Signed: _____ Date: _____*