

**Splitting and Carving – Course: Manual woodworking techniques.
Instruction examples for practical vocational training**

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Splitting and Carving – Course: Manual woodworking techniques. Instruction examples for practical vocational training

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Preliminary Remarks

The present booklet contains three instruction examples to practise the techniques of splitting and carving with various splitting and carving tools for different jobs, such as

- splitting–up of round timbers and logs,
- rough shaping of timbers with the axe,
- carving of accessories for furniture and structural elements.

Free working with splitting and carving tools can be applied in the entire field of manual woodworking.

The necessary materials, tools and auxiliary accessories are specified for each example to facilitate the preparation and execution of the work.

Previous knowledge of sketching, drawing and stencil making is required and should be recapitulated at the beginning.

The sequence of operations given for each example contains the order of working steps required for the relevant working technique. This sequence should be followed if a good quality of work is to be achieved.

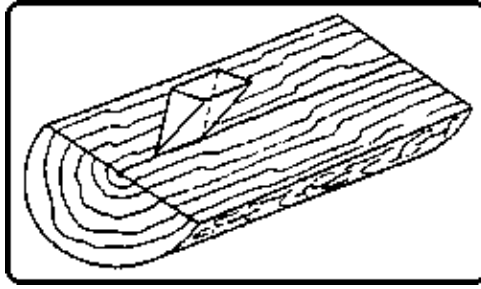
The operations included in the instruction examples serve for preworking of workpieces which, after further working steps, can be finished to produce things ready for use.

Instruction Example 3.1.: Splitting–up of Round Timber

Splitting–up of logs (halving and quartering) to permit crack–free drying of the wood required for carving.

Material

Round timbers of different lengths (1500 mm maximum) and diameters



Tools, measuring and testing means

Axe, steel wedges, wooden wedges, sledge hammer

Auxiliary accessories

Supporting block, different pieces of wood to secure the logs to be split up.

Necessary previous knowledge

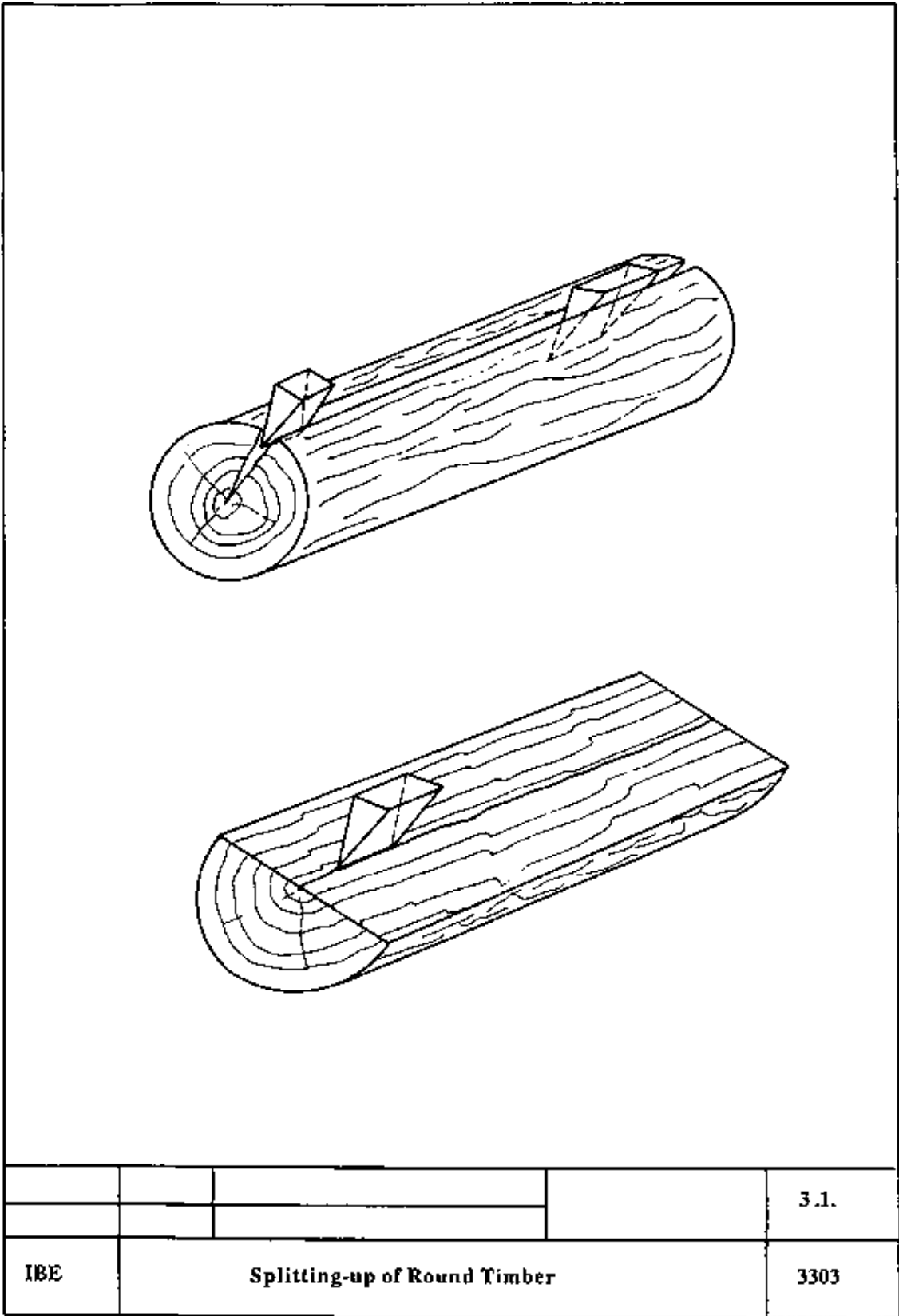
Structure of wood, splitability of wood, tangential and radial cutting directions, fundamentals of wood drying

Sequence of operations

1. Prepare the working place.
2. Inspect the log and select suitable spot for splitting.
3. Turn the log so that the side to be split will show up wards.
4. Secure the log at both sides.
5. Pre-split the log at the selected spot by the axe.
6. Remove the axe and place a steel wedge at the same spot and drive it slightly in with the hammer.
7. Drive the wedge into the wood with powerful hammer blows.
8. Place and drive-in further steel wedges if required by the log size.
9. Drive-in thicker wooden wedges into the splits produced and continue until the log is split up into halves.
10. Turn the log halves so that the heart of the log is showing upwards.
11. Place and drive-in the steel wedges in the heart (medullary).
12. Repeat the above steps 7 to 9 until log is quartered.
13. The split wood is to be taken to the drying place and prepared for drying.

Comments

- Check the tools, make available the auxiliary accessories.
- Find out direction of cracks, if any, in the cross-grained wood and take it into account for splitting.
- The log must be prevented from rolling off during the work to avoid accidents.
- Do not use the axe for driving-in the wedge!
- Be careful when the log halves are falling apart – danger of injuries!
- Secure the halves from slipping off or jumping off.
- On completion of work pick up, clean and store the tools.



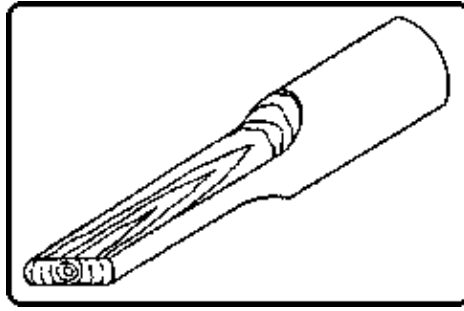
Splitting-up of Round Timber

Instruction Example 3.2.: Shaping of Round Timber

Rough shaping of timbers with the axe to produce simple commodities where accuracy and surface finish are of minor importance.

Material

Round timbers of dimensions depending on the purpose of use.



Tools, measuring and testing means

Folding rule, axe

Auxiliary accessories

Wooden block, pencil

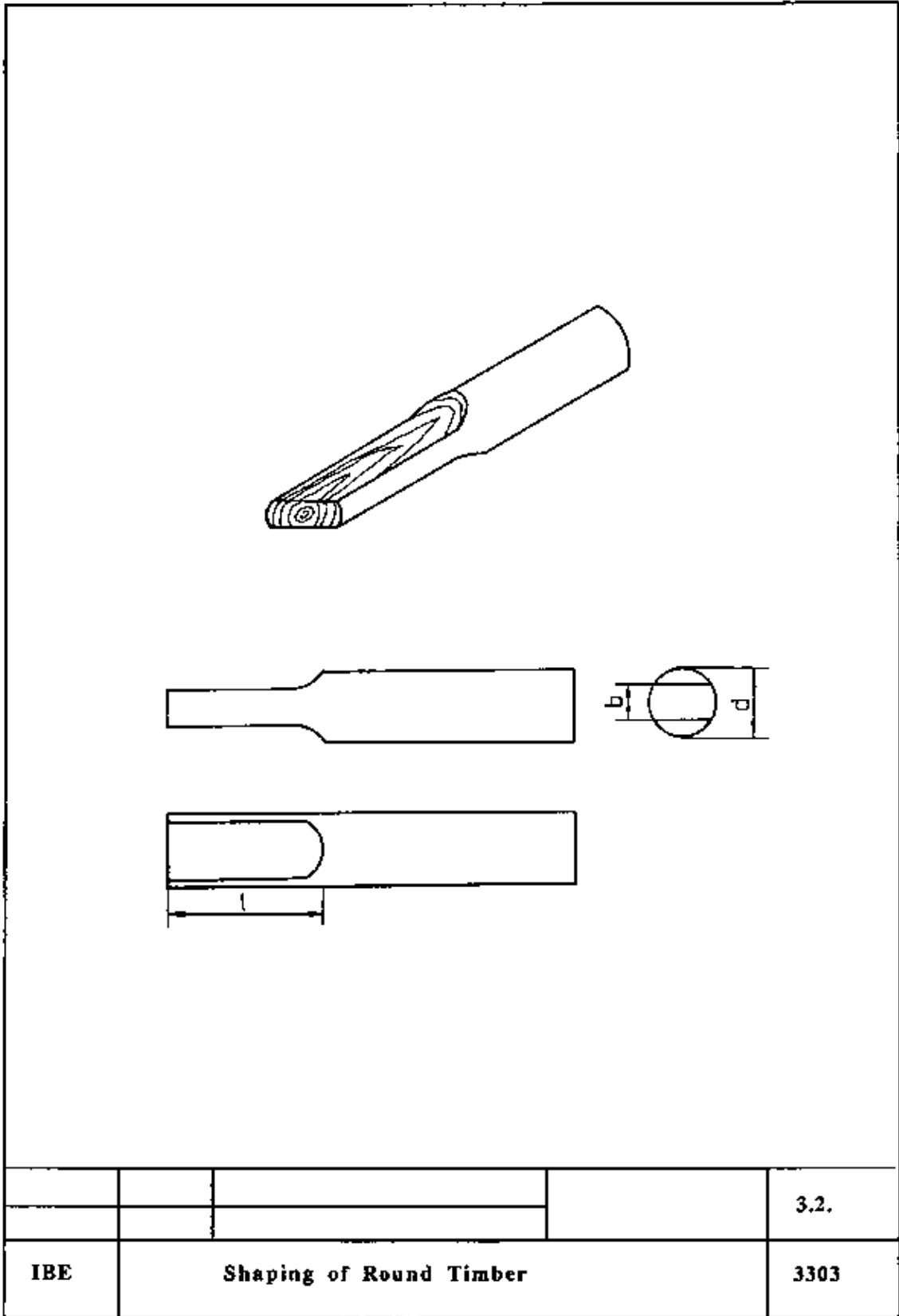
Necessary previous knowledge

Structure of wood, properties of wood, measuring and scribing

Sequence of operations

Comments

- | | |
|--|---|
| 1. Prepare the working place. | Check and, if necessary, sharpen the axe. |
| 2. Make available the material and inspect the properties and growth of the round timbers. | It is difficult to work knotty spots with the axe. |
| 3. Decide on the working direction. | Axe strokes should be in grain direction, if possible. |
| 4. Scribe the dimensions to be worked. | Scribe with folding rule and pencil the length on the circumference and the depth to be worked on the crossgrained end of the round timber. |
| 5. Roughly work the faces by axe strokes. | Correct working position is important to avoid accidents if the axe slips off. |
| 6. Check the dimensions worked. | |
| 7. Smooth the faces by cutting-off small chips with the axe. | Use a small, very sharp axe for smoothing. |
| 8. Check the working results. | The faces worked should be of equal size. |



Shaping of Round Timber

Instruction Example 3.3.: Relief

This instruction example explains how to produce a relief with simple raised letters. The term "Manual Woodworking" maybe replaced by any other term or name.

Material

Board of a well-grown deciduous tree without branch knots

Length = 400 mm

Width = 250 mm

Thickness = 30 mm

The board is to be planed out and sawn to final size.

Tools, measuring and testing means

Carving chisels of different shapes, mortise chisel, folding rule

Auxiliary accessories

Carpenter's bench or work bench, letter stencil, clamping pieces of wood, pencil, abrasive paper

Necessary previous knowledge

Sketching and drawing, handling the firmer chisel, ripping and mortising

Sequence of operations

Comments

- | | |
|--|--|
| 1. Prepare the working place. | Check the tools. |
| 2. Clamp the workpiece flat on the bench. | Use clamping pieces of wood to prevent damage to the workpiece edges. |
| 3. Mark out the sizes chosen for distribution of the area with pencil strokes on the right board side. | |
| 4. Transfer the letters with stencils or off-hand onto the scribed lines. | Choose the type of letters as simple as possible. |
| 5. The blank space around the letters is to be worked out to a depth of approx. 2 mm. | The recesses may be flat or undulatory. |
| 6. Scratch-in the contours of the letters and the framing with a firmer chisel. | |
| 7. Roughly carve-out the blank space around the letters with a gouge and mortise chisel. | Don't work too near to the edges when rough-carving. |
| 8. Finish-carve with different carving chisels. | Finish-carving is to be done preferably without mortise chisel. (One hand guides the carving chisels, the other one moves them.) |
| 9. Carve-out the interior spaces in the letters with narrow carving chisels. | The work is to be done with great care since the narrow letters may easily spall. |
| 10. If the recesses shall be flat, smooth them with abrasive paper. | Be careful – don't break off the edges of the letters! |
| 11. Remove any pencil strokes left carefully with a scraper or with abrasive paper. | |
| 12. Check the working result. | |