

Leseprobe

Christiani

est. 1931

Operational training · Metal working

Machine-based material processing

Section: Turning



Trainees

Dr.-Ing. Paul Christiani GmbH & Co. KG
www.christiani.de

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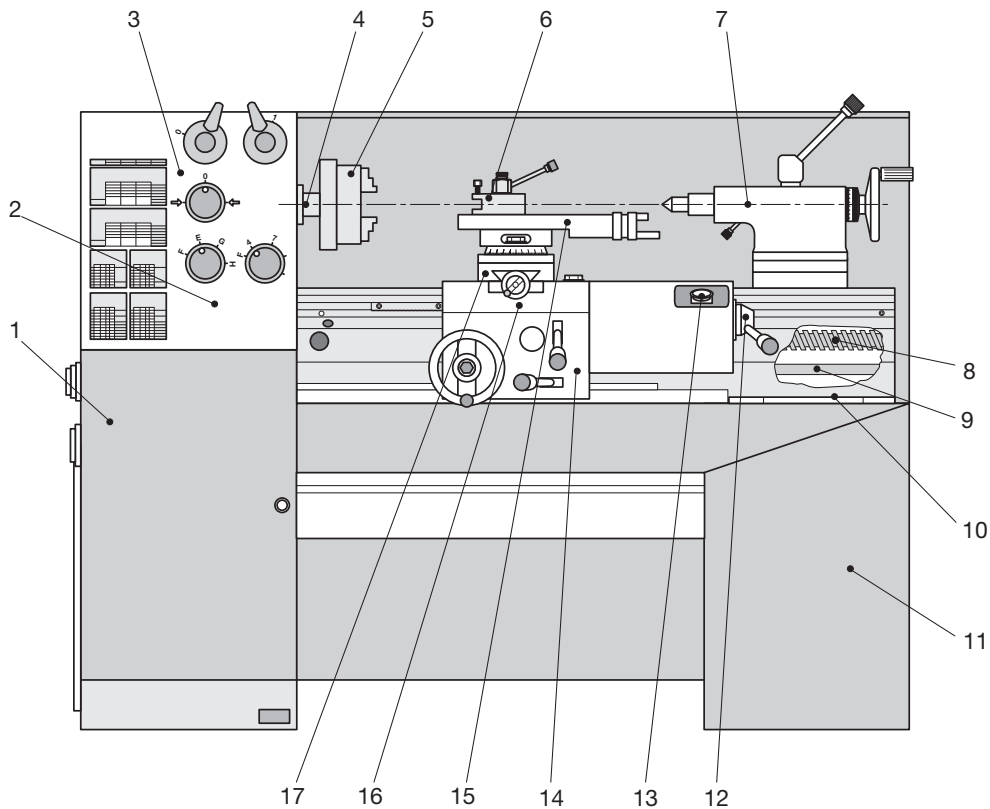
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The **Turning** course is designed to teach students the following skills, in accordance with the training scheme devised for industrial mechanics specialising in production engineering:

- ▶ To read, use and complete technical documents
- ▶ To take into account the material properties of steel, non-ferrous metals and plastics during the machining process
- ▶ To distinguish between lathe types and match lathes to manufacturing processes
- ▶ To recognise, determine and control working sequences and actions on the machine lathe
- ▶ To clamp and align tools and workpieces
- ▶ To describe and inspect the cutting edge geometry of lathe tools
- ▶ To use the lathe to produce workpieces according to specific parameters
- ▶ To service machine lathes according to the lubrication chart

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	General training aims	

The lead screw/feed shaft machine lathe



Key:

- | | |
|-----------------------|---|
| 1 Drive motor | 10 Lathe bed |
| 2 Feed gear mechanism | 11 Machine frame |
| 3 Headstock gears | 12 Main spindle selection lever:
On/off and Right/left |
| 4 Working spindle | 13 EMERGENCY STOP button |
| 5 Workpiece holder | 14 Apron |
| 6 Toolholder | 15 Top slide |
| 7 Tailstock | 16 Longitudinal slide |
| 8 Lead screw | 17 Transverse slide |
| 9 Feed shaft | |

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Equipping the workplace

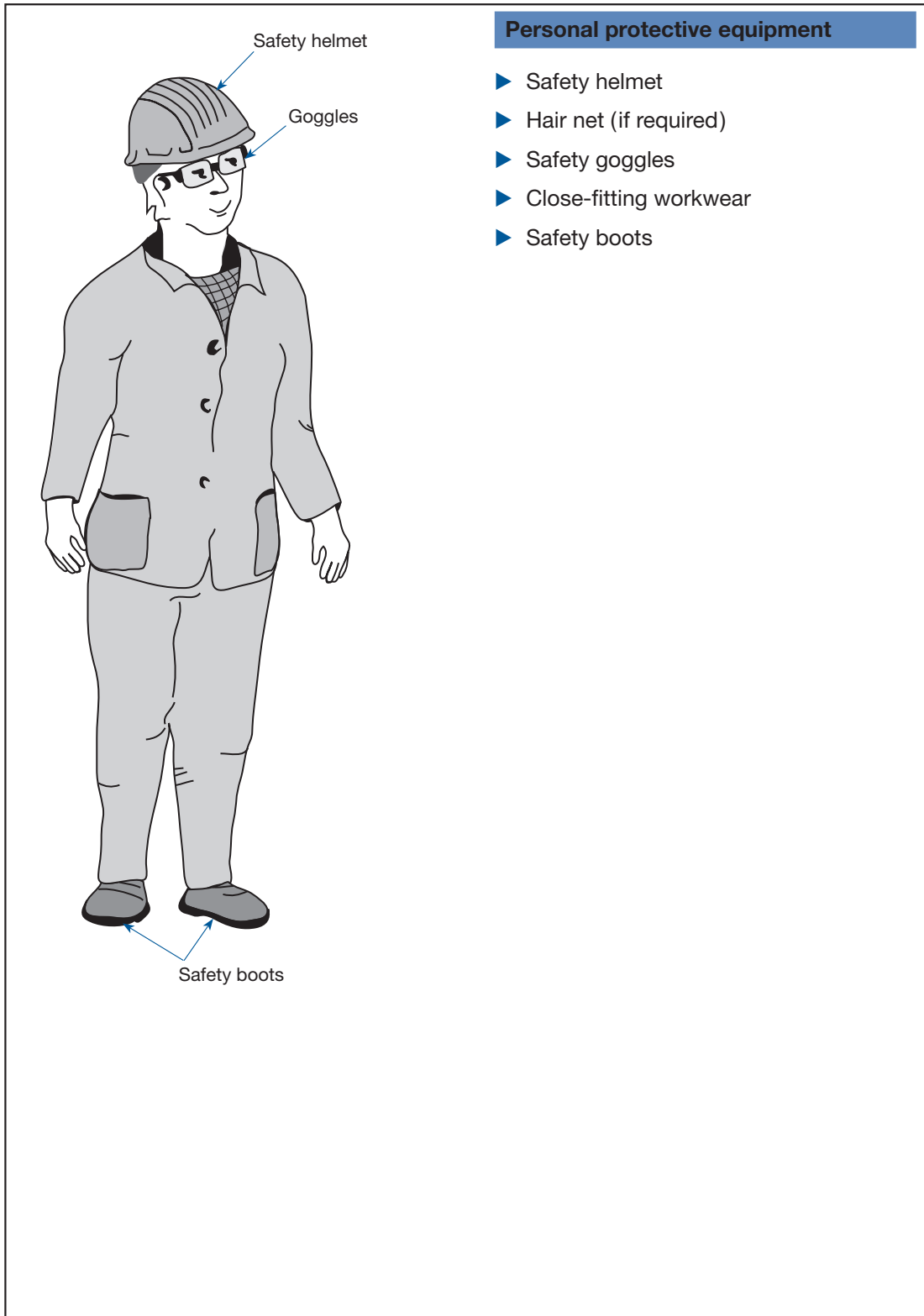
The lathe work station must be equipped with the necessary tools, materials and personal protective equipment. Furthermore:

- ▶ the workplace must be well lit
- ▶ there must be adequate space provided for the lathe operator
- ▶ the operator's area must be kept free from chips and swarf
- ▶ cooling lubricant must not be allowed to spill on to the floor

Tools and materials for the lathe workplace:

- ▶ Lathe tools
- ▶ Measuring tools
- ▶ Lathe file to DIN 7261, shape H
- ▶ "Soft" hammer
- ▶ Chip removal hook
- ▶ Open-ended wrench
- ▶ Valve-type oil can
- ▶ Grease gun
- ▶ Brush
- ▶ Whisk broom

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Personal protective equipment

- ▶ Safety helmet
- ▶ Hair net (if required)
- ▶ Safety goggles
- ▶ Close-fitting workwear
- ▶ Safety boots

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General advice on work safety

In order to prevent accidents, the occupational health and safety regulations must be observed at all workplaces.

The Accident Prevention Regulations (APR) issued by the German employers' liability insurance association are part of these regulations

The aim of these regulations is to draw attention to hazards and risks and to prevent accidents.

Key points of the APR and other safety criteria in relation to turning are as follows:

- ▶ Complete training and orientation before working on machine tools for the first time
- ▶ Remove all jewellery
- ▶ Wear close-fitting clothing and do not wear gloves. Wear safety goggles and, if necessary, a hair net
- ▶ Select suitable clamp tools and workpieces tightly and securely, remove the chuck key and store it in a safe place
- ▶ Test the lathe before commencing work
- ▶ Check concentricity at low rotational speed and compensate any imbalance
- ▶ Use a limit switch to restrict feed travel; set machine feed and speed correctly
- ▶ Ensure the chip flow is clear
- ▶ Do not measure or check rotating workpieces
- ▶ Do not stop the jaw chuck by hand
- ▶ Clean and remove chips only when the machine lathe is stopped

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