



**DEGEM
SYSTEMS**

Tech-Prep

Solar energy training system

Wind energy training system

Solar water heating energy
training system

Polar robot & robotics principles
training system

Conveyors & sorting machines
training system

Cartesian robot & computerized
storage training system

CNC lathe machine training
system

CNC milling machine training
system

Process control training system

Basic electronics training system

Basic communications systems

Basic pneumatics training system

Basic hydraulics training system

Basic mechanics training system

Pressure forming & inflation
training system

Bending & vacuum forming
training system

TP-3714

CNC Lathe Machine Training System

Objectives

Lathing is the process of applying a machine to cut and shape objects out of raw materials. The raw materials are, in many cases, wood, metal or plastic.

This course introduces the students to the CNC lathe. The students are exposed to industrial processes and control. The objectives of the course include teaching the students how to operate the lathe, and how to apply the program instructions in a logical sequence to produce a product. Students also learn about algebraic coordinate systems and their application in technology, the advantages of simulation, the need and the exercising of safety precautions in work. The students will be able to write, test and run their own programs by applying the G-Code set of control commands.

Description

The system contains a CNC lathe as well as the necessary accessories. The recommended work material for the lathe is Perspex. The system is accompanied by dedicated, user friendly, control software. Control is performed with the computer.



Specifications

LEARNING PROGRAM

- System description
- G-code and M-code
- Installing the D-LATHE software
- Operating the system
- Monitor description
- Turning processing
- Arches
- Turning the rod
- Project processing

TECHNICAL CHARACTERISTICS

- Z axis (110mm)
- X axis (45mm)
- Distance between centers - 180mm
- Spindle speed (2800 rpm nominal)
- Mechanical resolution ± 0.1 mm
- Spindle bore (10mm taper ISO no.1)
- Spindle motor (DC)
- Chuck (3 jaws)
- X and Z axis motors (Servo type; 12V DC)
- Turning diameter (30mm)
- Emergency stop button
- Transparent door with magnetic limit switch
- Low voltage lighting
- Vacuum cleaner unit
- RS-232 or USB communication to PC
- Motor driver (chopper type)
- Operating voltage (230 VAC, 115 VAC customer option)
- General dimensions (650 x 590 x 590 mm)
- Cabinet for protection against shavings
- Emergency stop button
- Emergency stop by door limit switch
- Tail for material
- Computer - machine connection (USB port)

SUPPLIED ACCESSORIES

The learning unit is supplied with the following accessories:

- 5 Perspex cylinders (100 x 20 mm)
- 2 Cutting knives (HSS 1/4")
- Chuck key
- Drill for center hole
- Allen key set
- Cleaning brush
- Caliper
- Software application and soft copy teacher guide for MS-Windows PC (PC is not included)

REQUIRED ACCESSORIES

- Personal computer with MS Windows

SAFETY FEATURE

The following safety features are provided by the learning unit:

- The unit has an 'Emergency Stop' push-button that cuts off all electricity to the unit when pressed.
- The door around the spindle and material has limit switches that prevent any operation of the machine when the door is open.
- There is a storage place for the chuck key. The machine will not run unless the chuck key is in the designated place.

The soft copy teacher guide contains the essential theory and detailed procedures for each hands-on activity.