

# IKASMAK 5.1

## Multi-process machine



▶ Multi-process machine for education.

**CUSTOMIZED SPECIAL MACHINES**



### DESCRIPTION

- ▶ Educational multi-process machine that integrates milling, turning and drilling operations.
- ▶ Conventional mode, conversational mode and CNC programming.
- ▶ Machining of different types of plastic and metallic materials.
- ▶ Online machine to obtain and analyze data for educational purposes - INDUSTRY 4.0.
- ▶ Development of a new training method in machining based on a unique equipment.
- ▶ Better adaptation of the machine in the industrial machining environment.
- ▶ More efficient training environment to develop active collaborative learning methods based on challenges.
- ▶ Less space necessary in the workshop.
- ▶ Chance to use the machine as a training tool for assembly and start-up in the mechatronics field.

## TECHNICAL CHARACTERISTICS

- ▶ X, Y, Z linear actuators: Ball spindle with direct drive.
- ▶ Milling head: Milling with  $\varnothing 63$  mm thin plates / Drilling with  $\varnothing 20$  mm bits / M12 threading.
- ▶ Turning head:  $\varnothing 80$  mm x 300 mm turning.
- ▶ Tailstock: Machine taper 3 and  $\varnothing 45$  mm pipe.
- ▶ Cooling: 20 l/min. water pump – 3 bar.
- ▶ Shaving outlet: Ramp towards the back part and a box.
- ▶ Zero Point: Chance for integration to mill and turn without releasing the part.
- ▶ Installed total power: 28,5 kW.

### Milling

- ▶ Workbench: 384 x 192 mm<sup>2</sup>
  - X course: 400 mm
  - Y course: 270 mm
  - Z course: 370 mm
- ▶ Max. speed in X, Y, Z: 6 m./min.
- ▶ Head power: 5,5 / 7,5 kW
- ▶ Machine taper: ISO 40
- ▶ Speed: 5,000 rpm
- ▶ Automatic securing
- ▶ Milling head lock torque: 342 Nm / 6 bar

### Turning

- ▶ X course: 370 mm
- ▶ Z course: 400 mm
- ▶ Max. speed in X, Z: 6 m./min.
- ▶ Head power: 5,5 / 7,5 kW
- ▶ Speed: 3,000 rpm

## CONTROL

Numerical control set for educational multi-function (MULTI-TOUCH) machine.

15" TFT color model: Compact machine comprised by central unit, operating panel (Jog panel) and QWERTY alpha-numeric keypad with built-in mouse.

Operation modes:

- ▶ Conventional milling machine to work with axes X, Y, Z and head. Movement of axes via Jog keys from CNC panel or wheel.
- ▶ CNC milling machine to work with axes X, Y, Z, A and head S, axis A being the division plate.
- ▶ ISO and conversational programming.
- ▶ Conventional lathe to work with axes X, Z and head. Movement of axes via Jog keys from CNC panel or wheel.
- ▶ CNC lathe to work with axes X, Z and head S. ISO and conversational programming.
- ▶ Multi-process machine or combined lathe-milling cutter machine.

Features:

- ▶ RAM memory: 2 GB
- ▶ Hard drive memory: 4 GB; 2,7 GB free for user. Optional: 8 GB and 32 GB.
- ▶ Fast Ethernet 10/100Base-T.
- ▶ 3 USB ports.
- ▶ Remote assistance via TeamViewer.
- ▶ Available languages: Basque, Spanish, English (up to 12 languages).
- ▶ Time of block processing: 0.25 ms.
- ▶ Parametrizable look-ahead from 300 to 2,400 blocks.
- ▶ Internal nanometric resolution for CNC calculation (1 nm).

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