## MANURHIN K’MX SWING

### TECHNICAL DATA

#### STANDARD EQUIPMENT
- FANUC 310i control system
- K’MX Plus programming software
- Main spindle and subspindle
- 4 independent tool slides for 23 tools
- Set of tool holders
- 2 collet clamping attachments (164E and 161E collets)
- Parts catcher

#### OPTIONAL EQUIPMENT
- Live tools
  - on rear tool slide
  - on front tool slide
  - on device for machining from front side
  - on unit for machining from rear side
- “C”-axis on main spindle
- “C”-axis on subspindle
- Long parts ejection device
- Bar feeder
- Tool setting device

#### SPECIFIC K’MX FUNCTIONS BUILT INTO THE BASIC MACHINE
- Several components may be programmed in one stroke
- Electronical crank-handle enabling following operations:
  - by hand: manual displacement of the axes
  - MDI and automatic mode: modulation of feeding according to the rotation of crank-handle
- Barfeed or barloader interface including:
  - end of bar signal
  - bar loading cycle
  - automatic bar facing cycle

### MAIN SPINDLE
- Maximum bar capacity: Ø 26 (32) mm
- Max. machining length in one feeding: 250 mm
- Main spindle bore: Ø 33 mm
- Spindle drive
  - Max. power of A. C. motor: 7.5 kW
  - Maximum spindle speed: 8 000 (10 000) rpm
- Spindle direction: left and right

### SLIDING HEADSTOCK
- Headstock stroke: 250 mm
- Rapid feed: 30 m/min

### HORIZONTAL SLIDE
- Number of slides: 2
- Stroke: 2 × 45 mm
- Rapid feed: 30 m/min

### VERTICAL SLIDE – TOOLHOLDER
- Number of slides: 2
- Stroke of vertical slide: 2 × 180 mm
- Rapid feed: 30 m/min
- Number of tools: (2 × 5) : 10
- External machining tool shank size: 16 × 16 mm

### EDWORKING ATTACHMENT
- Stroke of vertical slide: 343 mm
- Rapid feed: 16 m/min
- Number of tools: 4

### LONGITUDINAL SLIDE
- Stroke of longitudinal slide: 230 mm
- Rapid feed: 30 m/min

### SUBSPINDLE – VERTICAL SLIDE
- Vertical stroke: 452 mm
- Rapid feed: 16 m/min

### LONGITUDINAL SLIDE
- Stroke of longitudinal slide: 215 mm
- Rapid feed: 30 m/min
- Maximum bar capacity: Ø 26 mm
- Max. length of part inside the subspindle for frontal ejection: 150 mm
- Maximum length of part for frontal ejection: 170 mm
- Spindle bore: Ø 26.5 mm
- Maximum spindle speed: 8 000 (10 000) rpm
- Max. power of A. C.: 5.5 kW

### PNEUMATIC CONTROLS
- Air pressure required: 6 bars
- Connection by “Banjo” coupling: Ø 10 mm

### COOLANT
- Tank capacity: 200 l
- Pressure: 2.8 bars

### ELECTRICAL EQUIPMENT
- Voltage: 3 × 400 V – 50 Hz
- Total absorbed power: 32 kVA

### COMPLEMENTARY DATA
- Dimensions: 3 100 × 1 420 × 1 960 mm
- Weight: 4 250 kg

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**Description, illustrations and numerical data may not always correspond with the machine latest version.**

**MANUFACTURER**

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**MANURHIN K’MX SWING**
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- High productivity
- Machining in 10 linear axes
- K’MX Plus programming software
- 23 tool stations, 14 live tools
- Extraordinary drilling and milling performance
- Diagnostics of cutting process
The **K'MX SWING 10 AXIS** is dedicated to machining complex parts from the bar up to ø 32 mm. The SWING 10 AXIS is declined in bar capacity ø 20, ø 26, and ø 32 mm. The main characteristics from K'MX SWING 7 AXIS are:

- **Productivity**, up to 23 tools including 14 powered tools, up to 4 tools, working simultaneously with 10 independent axis.
- An easy and quick tool change with the compatible toolholder cartridge system.
- A simplified programming with K'MX PLUS software.
- Ergonomic and easy access with a large opening door and a numerical control working under WINDOWS.

K'MX SWING is the ideal solution to manufacture complex parts with high productivity and useful for the operator.

The cast-iron framework ensures optimal and rigid conditions for machining operations.

Each rack has 5 stations for O.D. operations. The 2 slides are independent and the opposite tools can perform rough and finish turning simultaneously by one tool following the other.

- **Kinematics of 10 axis K'MX SWING**

All K'MX SWING machines are equipped with a subspindle. On the 10 axes model, the subspindle and the end working attachment are totally independent (2 separate cross slides).
**NUMERICAL CONTROLS: FANUC 310i**
Numerical control of the latest generation with PC integrated working with Windows.
LCD 10.4" colour screen
PC keyboard
32 bits
Digital interface between numerical controls and motor drive

**PROGRAMMING SOFTWARE K'MX PLUS**
Programming system especially adapted to multi-axes screw machines
Mini programmable increment: 0.001 mm
Direct programmation on machine
Programme edition during machining
Loading and unloading programming in idle time
Possible to programm from an external PC (option)
Programming possible through function keys
Independant programming of each operation
Automatic management of tools call – threading – deep drilling
Graphic simulation for the complete cycle or for the operation considered
Automatic management of simultaneous operations
Automatic proposal of the optimal solution with maximum of simultaneous possible
Introduction of tools correctors through piece program
Programming test without axis displacement
Numerical workpiece counter
Display of cycle time

- Spindle indexing and mechanical locking. The indexing resolution is 0.001°. The spindle is mechanically locked for the drilling, tapping and milling operations with the powered tools.

- The K'MX SWING allows to machine complex parts from bars up to ø 32 mm. The 10 axes model can be used like a turning-milling center with up to 14 powered tools.

- Simultaneous milling on both racks

- Multi-slots milling
  Special toolholder on rear rack
  Capacity: up to 8 saw milling ø 30 mm
  Speed: 2 000 rpm

- Transverse drilling with high frequency spindle
  High frequency spindle on front and rear rack
  Capacity: ø 1.15 – 5 mm
  Spindle speed: 6 000 – 60 000 rpm
  Power: 0.125 kW

- Deep hole drilling
  150 bar or even higher coolant pressure