Vertical Milling Machines (Mills)

Servomill® FPK 500

SKU : 302353

This versatile tool and milling machine has become indispensable in the mechanical manufacturing of tools and molds. Its compact design offers a great deal of flexibility while being very easy to operate. This has proven highly effective and is given a modern interpretation here. Equipped with electronic stops, electronic handwheels and additional milling functions, the Servomill makes the advantages of CNC large-scale technology accessible even without programming. The machines are mainly used in toolmaking, production and training.

- Servo feed technology with electronic handwheels
- Ball screws in all axes
- 3-fold electronic stop
- Large vertical console and work table
- Vertical and horizontal spindle
- Infinitely variable spindle speed

TECHNICAL SPECS

WORKING AREA

Table dimensions	31 in x 16 in
Vertical table	40 in x 9 in
Table load capacity (max.)	440 lbs
Number of T-slots	6 positions
T-slot (width x spacing)	0.55 in x 2.48 in
T-slots, vertical table (number)	3 positions
T-slots, vertical table (width x spacing)	0.55 in x 2.48 in

TRAVELS

Travel X-axis	19.7 in
Travel Y-axis	16 in
Travel Z-axis	16 in

MILLING HEAD

Speed range, low	40 rpm - 260 rpm
Speed range, high	260 rpm - 2000 rpm
Spindle speed	40 rpm - 2000 rpm
Spindle mount	SK 40 DIN 2080
Swivel angle	90 deg
Travel pinole	2 in
Spindle nose-to-table distance	2 in - 18 in
Spindle nose-to-column distance	7 in - 22 in

RAPID FEED

Rapid feed X-axis	47.24 in/min
Rapid feed Y-axis	47.24 in/min
Rapid feed Z-axis	47.24 in/min

HORIZONTAL MILLING SPINDLE

Spindle mount	SK 40 DIN 2080
Spindle center-to-table distance	6 in - 21 in

FEED

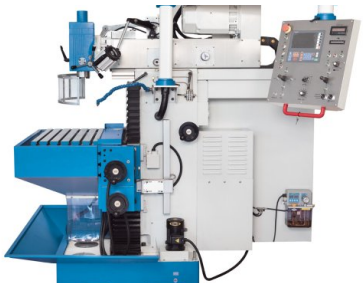
Work feed X-axis	0.394 in/min - 39.37 in/min
Work feed Y-axis	0.394 in/min - 39.37 in/min
Work feed Z-axis	0.394 in/min - 39.37 in/min

DRIVE CAPACITY

Motor rating main drive	5 Hp
Motor rating coolant pump	0.2 Hp
Feed X-axis	6 ft.lb.
Feed Y-axis	6 ft.lb.
Feed Z-axis	7 ft.lb.

MEASURES AND WEIGHTS

Overall dimensions (length x width x height)	60 in x 67 in x 71 in
Weight	3410 lbs



Practical layout of control elements allows streamlined and intuitive operation

A large work table and long travels provide maximum versatility

Continuous precision lubrication minimizes friction and wear of movable parts and increases the machine life

An integrated cooling system optimizes the machining process, increases tool life and improves the surface quality of your workpieces

PRODUCT DETAILS

Integrated electronics allow for easier, more precise and more efficient conventional milling

- The Servomill machines represent a new generation of conventional milling machines
- All Servomill series are characterised by ease of operation, significantly increased precision and enhanced cutting performance
- The high reliability of all components used and their long service life significantly reduce maintenance costs and thus ensure increased availability

Design and Construction

- The design of the FPK series is the modern interpretation of the classic universal tool milling machine, which is used in many workshops and production environments
- The machine stand in console design is a modern construction made of high-quality grey cast iron, designed for precision and durability
- As a proven design feature, all operating elements are concentrated on the right-hand side of the machine, giving the operator perfect control over the entire machining process
- The box guides are highly resilient thanks to their large contact surface and guide the console and upper beam with maximum dimensional stability and load-bearing capacity

Main spindle and drives

- The main spindle gearbox is integrated in the upper beam for efficient power transmission and quiet, low-vibration operation
- The robust 2-stage gearbox with hardened and ground gears offers a wide, infinitely variable speed range, high load capacity and smooth running
- The vertical milling head can be swivelled on both sides and the quill can be moved manually
- The vertical milling head can be dismantled in a few simple steps to reveal the horizontal spindle holder
- A counter-holder can be fitted as standard for machining with long milling arbours

Feed

- Powerful servomotors enable infinitely variable feed speeds and rapid traverse in all axes
- Preloaded ball screws in all axes guarantee precise, smooth and low-wear positioning without backlash and a long service life

Equipment

- The machines come with an extensive range of accessories as standard, such as a powerful coolant system, LED work lighting and a comprehensive tool package with long arbours and collets

Servomill - Highlights

- Electronics developed and built in Germany
- Positioning control for traveling pre-selected paths on all axes
- Zero backlash preloaded ball screws
- Servo-motors on all axes, infinitely variable feed, rapid feed, and speed control
- Electronic spindle load indicator
- Electronic hand-wheels on all axes
- X, Y and Z axis movement via joystick technology
- Integrated position indicator with precision glass scale
- Feed can be synchronized with the spindle speed
- Powerful servo motors allow infinitely variable feed speeds and rapid feeds on all axes

Position indicator X.pos 3.2

- The new generation of displays is more powerful, robust, and reliable
- For additional information, see manuals included with the standard equipment

Your Advantages

- Easy to use: intuitive operation - practical layout of control elements and streamlined function
- Automatic feed on all axes infinitely variable
- Set limit stops on any axis with the push of a button - 3 stop positions per axis can be stored
- More precise: operated via electronic hand-wheels - axes are powered by high-quality servo drives that translate your hand movements with the precision and dynamics of modern CNC machines
- More reliable: drives, spindles, and measuring systems are totally enclosed or mounted in protective enclosures and virtually maintenance-free

- More capacity: this machine only uses premium drive components that are designed for continuous operation
- Maintenance-free: no regular maintenance needed for the entire feed drive

Advanced feed drive technologie

- The axes are moved by high-quality servo drives that implement your handwheel movements with the precision and dynamics of modern CNC machines
- Reliable, maintenance-free high-volume technology
- High rapid traverse speed reduces non-productive times

Ballscrews in all Axis

- Considerably less errors due to loseness (backlash), resulting in significantly higher precision
- Significantly reduced friction, no stick-slip effect, reduced heat buildup, minimal wear

Electronic hand-wheels

- Micro-control via electronic hand-wheels offering the same handling and postioning as with a conventional machine, just smoother and more precise

Joystick Operation

- Maximum operator comfort for axis movements
- Easy handling during sequential processing

Electronic Bedstops

- Set 2 limit stops at 3 positions on each axis by the push of a button - these buttons are grouped around the feed switch for intuitive control
- This ensures high repeatability during coordinate drilling or pocket cutting, and siginificantly more positions can be set up than on conventional machines

Electronic Spindle Load Display

- Assists the operator in the most efficient utilization of machine and tool capacities
- Reliable indicator helps avoid damages caused by overloads

STANDARD EQUIPMENT

control panel with X.Pos 3.2 and extended functions
preloaded ball screws and direct servo drives on all axes
automatic feed with electric limit switch on all axes
electronic hand-wheels
milling accessories
automatic central lubrication
heat exchanger for electric control cabinet
height-adjustable protective cover
coolant System
LED worklight
Operator instructions

OPTIONAL EQUIPMENT

- Universal swivel table, SKU : 254275