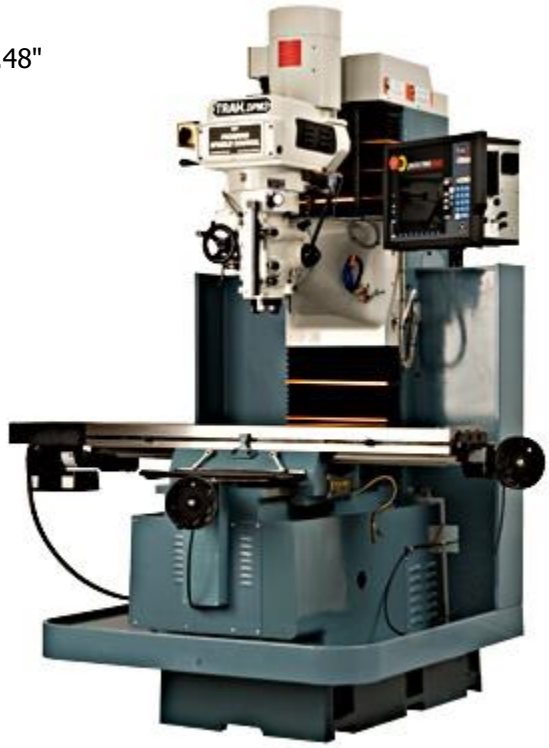
Southwestern Industries, Inc.

DPM SX3P Bed Mill Specifications with the ProtoTRAK SMX3 Control

Machine Specifications



Machine shown with additional options

- Table Size – 50" x 10"
- T-Slots (number x width x pitch) - 3 x .63" x 2.48"
- Travel (X, Y, Z axis) - 31 x 17 x 23.5"
- Quill Diameter - 3 15/16"
- Maximum Quill Travel - 5"
- Spindle Taper - NMTB 40
- Spindle Speed Range - 40-600, 300-5000
- Spindle Center to Column Face - 19"
- Spindle Motor Power – 5 HP
- Power requirements, control - 110V; 1P; 10A
- Power requirements - 220V;3P; 17.5A
- Maximum Weight of Workpiece - 1320 lbs.
- Height of table from bottom of bed - 38"
- Max spindle nose to table – 23.5"
- Min height - 85"
- Max height - 95"
- Width of machine including table - 73"
- Length with electric box door closed - 66"
- Overall width incl full table traverse - 108"
- Overall length with electrical door open - 76"
- Footprint of Machine - 24" x 44"
- Weight net / shipping lbs. - 4100 / 4400
- Rapid traverse X, Y, Z - 150 IPM
- Auto Lube Pump
- Precision ground ballscrews in the table, saddle and ram
- Chrome hardened and ground quill
- Meehanite castings
- Slide ways are Turcite coated
- Wide way surfaces are hardened and ground
- Drilling max capacity - 1"
- Milling max capacity - 5 inch³/min
- Tapping max capacity – 1 - 8

Machine Options

- Glass Scales on table and saddle
- Auxiliary Function hardware box
- Electronic Handwheels
- Remote Stop/Go switch
- Power Drawbar

- Halogen Worklamp
- Chip Pan / Splash Shield
- Coolant Pump
- Spray Coolant
- Table Guard Enclosure
- Limit Switches
- Vise

ProtoTRAK SMX System Specifications

(O) indicates optional feature

ProtoTRAK System Hardware

- ProtoTRAK SMX CNC
- Two- or three-axis CNC, 3-axis DRO
- Real handwheels for manual operation
- 10.4" color active-matrix screen
- Industrial-grade Pentium® processor
- 1 GB Ram
- 4 USB connectors
- Override of program feedrate
- LED status lights built into display
- RJ45 Port and Ethernet card (O)
- Override of program spindle speed (O)
- USB Thumb drive flash memory 512 MB or more (O)
- Uncluttered front panel with few hard keys
- Integrated Ram and Quill encoders resolve to one Z dimension

Software Features – General Operation

- Clear, uncluttered screen display
- Prompted data inputs
- English language – no codes
- Soft keys - change within context
- Windows® operating system
- Selectable two or three-axis CNC
- Color graphics with adjustable views
- Inch/mm selectable
- Convenient modes of operation

DRO Mode features

- Incremental and absolute dimensions
- Jog at rapid with override
- Powerfeed X, Y or Z
- Do One CNC canned cycle
- Teach-in of manual moves
- Servo return to 0 absolute
- Tool offsets from library
- Go To Dimensions (O)
- Spindle speed setting with manual override

- Fine/Course handwheel resolution (O)

Program Mode features

- Auto Geometry Engine (O)
- Geometry-based programming
- 3-axis geometry programming (O)
- Tool Path programming (O)
- Scaling of print data (O)
- Multiple fixture offsets (O)
- Programming of Auxiliary Functions (O)
- Event Comments (O)
- Three-axis Geometry conversational programming (O)
- Incremental and absolute dimensions
- Automatic diameter cutter comp
- Circular interpolation
- Linear interpolation
- Look –graphics with a single button push
- List step – graphics with programmed events displayed
- Alphanumeric program names
- Program data editing
- Program pause
- Conrad – automatic corner radius
- Programmable spindle speeds
- Math helps with graphical interface
- Auto load of math solutions
- Tool step over adjustable for pocket routines
- Pocket bottom finish pass
- Selectable ramp or plunge cutter entry
- Subroutine repeat of programmed events
- Nesting
- Rotate about Z axis for skewing data
- Mirror of programmed events (O)
- Copy (O)
- Copy rotate (O)
- Copy mirror (O)

Canned cycles

- Position
- Drill
- Bolt Hole
- Mill
- Arc
- Circle pocket
- Rectangular pocket
- Irregular Pocket (O)
- Circular profile
- Rectangular profile

- Irregular Profile(O)
- Circle Island (O)
- Rectangular Island (O)
- Irregular Island(O)
- Helix (O)
- Thread milling (O)
- Engrave(O)
- Tapping(O)
- Face Mill (O)

Edit mode Features

- Delete events
- Erase program
- Spreadsheet editing (O)
- Global data change (O)
- G-Code editor (O)
- Clipboard to copy events between programs (O)

Set Up Mode Features

- Program diagnostics
- Advanced tool library
- Tool names
- Tool length offset with modifiers
- Advanced diagnostic routines
- Software travel limits
- Tool path graphics with adjustable views
- Program run time estimation clock (O)

Run Mode Features

- TRAKing (O)
- Trial run at rapid
- 3D CAM file program run
- 3D G code file run with tool comp
- Real time run graphics with tool icon
- Countdown clock to next pause or tool change (O)

Program In/Out Mode Features

- Program storage to USB flash drives
- CAM program converter
- Converter for prior-generation ProtoTRAK programs
- DXF/DWG file converter (O)
- Selection of file storage locations (O)
- Automatic file back-up routine (O)
- Preview graphics for unopened files (O)
- Networking (O)

Control Options

Advanced Features with Verify Option

- Verify – see a 3-D model machined before cutting chips
- Auto Geometry Engine ™
- Programmable Auxiliary functions
- 3-axis conversational programming
- Additional Canned Cycles:
  - Irregular Pocket
  - Circle Island
  - Rectangular Island
  - Irregular Island
  - Irregular Profile
  - Helix
  - Thread milling
  - Engrave
  - Tapping
  - Face Mill
- G-Code editor
- Countdown clock to next pause or tool change
- Total program time estimator
- Spreadsheet editing
- Global data change
- Scaling of print data
- Multiple fixture offsets
- Event comments
- Tool path conversational programming
- Mirror of programmed events
- Copy with or without offsets
- Copy Rotate
- Copy Mirror
- Clipboard to copy events between programs

Networking Option

- Networking via RJ 45 port

The DXF File Converter Option

- Import and convert CAD data into ProtoTRAK programs
- DXF or DWG files
- Chaining
- Automatic Gap Closing
- Layer control
- Easy, prompted process you can do right at the machine

CAM Out Converter Option

- Save ProtoTRAK files as CAM files for running on different controls

TRAKing/Electronic Handwheels Option

- Electronic Handwheels on X and Y (replaces the mechanical handwheels)

- TRAKing of programs during program run
- Go To Dimensions
- Selectable Fine/Coarse handwheel resolution