Southwestern Industries, Inc.

DPM SX3 Bed Mill Specifications with the ProtoTRAK SMX3 Control

Machine Specifications

- 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 RPM – Varispeed drive - 70-3950
- Spindle Speed Range with E Head Option - 40-600, 300-5000
- Spindle Center to Column Face - 19"
- Spindle Motor Power – vari-speed head - 5 HP
- Spindle Motor Power – Optional E head - 5 HP
- Power requirements, control - 110V; 1P; 8A
- Power requirements, machine with vari-speed head - 220/440V;3P; 14/7A
- Power requirements, machine with Optional E head - 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, Varispeed head- 1" dia
- Milling max capacity, Varispeed head - 5 inch³/min
- Tapping max capacity, Varispeed head - 1"
- Drilling max capacity, Optional E head - 1"
- Milling max capacity, Optional E head - 5 inch³/min
- Tapping max capacity, Optional E head – 1 - 8

Machine Options

- Programmable Electronic Head
- TRAK Sensors on table and saddle
- Glass Scales on table and saddle
- Auxiliary Function hardware box
- Programmable Electronic Head
- 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 Celeron® processor
- 256 MB Ram
- P/S 2 Keyboard connector
- 2 USB connectors
- Override of program feedrate
- LED status lights built into display
- TEAC floppy drive
- RJ45 Port and Ethernet card (O)
- Override of program spindle speed (O)
- 128 MB USB Thumb Drive flash memory (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 (O)
- 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 (O)
- 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)

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

- Simple program storage to floppy
- 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 Option
- 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
- 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/Memory Option
- Directory/File/Folder Program organization
- Automatic file back up routine
- Preview Graphics for unopened files
- USB Thumb Drive flash memory, 128 MB or more

- 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