Southwestern Industries, Inc.
TRAK DPM FHM7 Bed Mill with the ProtoTRAK SMX CNC

Machine specifications
- Table size – 76" x 14"
- T-slots (number x width x pitch) – 3 x 63" x 2.48"
- Travel (X, Y, Z axis) – 60" x 23" x 20.5"
- Quill diameter – 5.06"
- Spindle taper – NMTB 40
- Spindle speed range RPM – 200-5000
- Spindle center to column face – 23"
- Spindle motor power – 7.5 HP
- Power requirement – 3 phase, 220V, 60 HZ; 37.5 FLA
- Power Requirement Control – 110V; 1 phase; 15A
- Maximum weight of workpiece – 2200 lbs.
- Height of table from bottom of bed – 38.25"
- Maximum spindle nose to table – 24"
- Minimum height – 95.5"
- Maximum height – 101"
- Width of machine including table – 110.5"
- Length with electric box door closed – 93.75"
- Overall width including full table travel – 171.65"
- Overall length with electrical door open – 119.5"
- Footprint – 42.52" x 63"
- Way surface – dovetail X axis; square ways Y and Z axis
- Weight (approximate) net – 7650 lbs.
- Weight (approximate) shipping – 7975 lbs.
- Maximum work capacities – Drilling (mild steel) max. dia. 1.00"; tapping, 5/8"; milling capacities, 7 inch^3/min
- Way surfaces hardened and ground
- Turcite coating on all slide ways

Standard Features
- Automatic lubrication pump
- Auxiliary function hardware
- Limit switches
- Programming of Auxiliary Functions
- Programmable Spindle Control

TRAKing/Electronic Handwheels
- Electronic Handwheels on X and Y (replaces the mechanical handwheels)
- TRAKing of programs during program run
- Go To Dimensions
- Selectable Fine/Coarse handwheel resolution

Machine Options

- Glass scales for table and saddle
- Power drawbar
- Remote stop/go switch
- Coolant pump
- Spray coolant
- Table guard
- Halogen work lamp
- Chip pan / splash shield
- 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
- USB Thumb drive flash memory 512 or more (O)
- Uncluttered front panel with few hard keys
- Ballscrew and motor assembly installed on quill
- Electronic quill handwheel

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)
- Fine/Course handwheel resolution

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
- 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
- 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
- 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 drive
- 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 ™
- 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