

TRAK[®] MACHINE
TOOLS

Featuring
ProtoTRAK CNCs

TRAK Bed Mills Featuring the ProtoTRAK SMX CNC

What you need for Short Run and Prototype Milling



SOUTHWESTERN INDUSTRIES, INC.

TRAK Bed Mills

The machines you need for productive low-volume milling



DPM SX2P

Manual Quill

For convenient manual operation or for setting tool lengths.

Wide way surfaces

Hardened and ground for smooth operation and rigidity. Slideways are Turcite® coated for long life.

The ProtoTRAK SMX CNC is always easy to use

- Manual milling when you need it
- 2-axis CNC with manual quill
- 3-axis CNC with programmable spindle speeds

Real Handwheels

So you can move the machine manually when that's the best way to get something done.

Generous Z Travel

For added capacity and versatility of tooling and workpieces



DPM SX3P



DPM SX5P

Solid Ram moves along the column for Z servo jog and CNC

Provides mass for precision and heavy cuts

TRAKing® *Our favorite option!*

Standard on the DPM SX5P and the FHM7.

You control CNC program run by cranking one of the handwheels. You have to see it to appreciate what it will do for your productivity.

Quill Scale and Z Motor Encoder are one Z dimension

The ProtoTRAK SMX CNC integrates both encoders in order to keep track of position of tool. Your Z dimension will be accurate no matter which you move.

Precision ground ballscrews in the table, saddle and column

For accurate, precise positioning for manual and CNC operation.

Bed Support for table and saddle

Assures rigidity for precise machining and heavy workpieces.



FHM7

TRAK DPM SX2P Bed Mill

The footprint and feel of a knee mill, with added strength and capacity



DPM SX2P

DPM SX2P features:

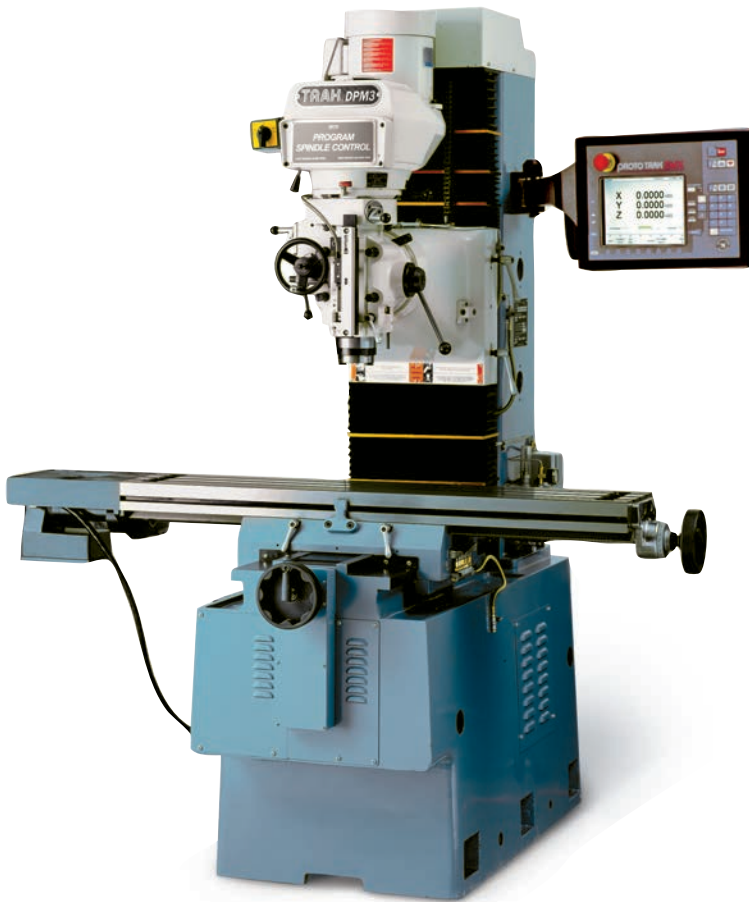
- ProtoTRAK SMX CNC
- Solid ram moves along the column providing mass for heavy cuts
- Generous Z-axis CNC travel
- Strong and rigid
- Efficient for any job: manual, 2-axis CNC, 3-axis CNC
- Precision ground ballscrews installed in the table, saddle and column
- Manual quill with integrated quill and ram encoders
- Wide way surfaces are hardened and ground, slideways are Turcite® coated
- Real handwheels so you can work manually
- R8 spindle taper
- 3 hp continuous spindle motor
- Standard electronic head for programmable spindle speeds and tapping



Shown with optional chip pan and splash shield

TRAK DPM SX3P Bed Mill

Our most popular bed mill due to its combination of low price and great specs



DPM SX3P

Like all TRAK Bed Mills, the DPM SX3P features:

- ProtoTRAK SMX CNC
- Solid ram moves along the column providing mass for heavy cuts
- Generous Z-axis CNC travel
- Strong and rigid
- Efficient for any job: manual, 2-axis CNC or 3-axis CNC
- Standard electronic head for programmable spindle speeds and tapping
- Precision ground ballscrews installed in the table, saddle and column
- Manual quill with integrated quill and ram encoders
- Wide way surfaces are hardened and ground, slideways are Turcite® coated
- Real handwheels so you can work manually

With these important differences:

- 5 hp continuous spindle motor
- NMTB40 spindle taper and almost 4" quill diameter



Shown with optional chip pan and splash shield

TRAK DPM SX5P Bed Mill

Outstanding work piece capacity with support from a massive saddle



DPM SX5P

Like all TRAK Bed Mills, the DPM SX5P features:

- ProtoTRAK SMX CNC
- Solid ram moves along the column providing mass for heavy cuts
- Generous Z-axis CNC travel
- Strong and rigid
- Efficient for any job: manual, 2-axis CNC or 3-axis CNC
- Standard electronic head for programmable spindle speeds and tapping
- Precision ground ballscrews installed in the table, saddle and column
- Manual quill with integrated quill and ram encoders
- Wide way surfaces are hardened and ground, slideways are Turcite® coated

With these important differences:

- 5 hp continuous spindle motor
- Standard electronic handwheels with selectable fine / coarse handwheel resolution
- 4400 lbs of machine mass
- NMTB40 spindle taper and almost 4" quill diameter
- 40" x 20" X and Y travels



Shown with optional chip pan and splash shield

TRAK FHM7 Bed Mill

Our largest mill with outstanding travels and capacities



FHM7

Shown with optional chip pan and splash shield

Like all TRAK Bed Mills, the FHM7 features:

- ProtoTRAK SMX CNC
- Solid ram moves along the column providing mass for heavy cuts
- Generous Z-axis CNC travel
- Strong and rigid
- Efficient for any job: manual, 2-axis CNC or 3-axis CNC
- Standard electronic head for programmable spindle speeds and tapping
- Precision ground ballscrews installed in the table, saddle and column
- Wide way surfaces are hardened and ground, slideways are Turcite® coated

With these important differences:

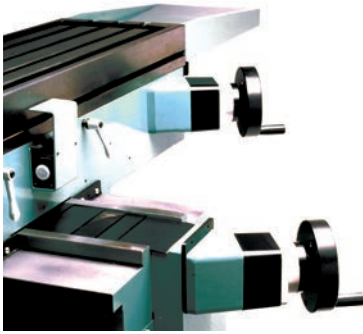
- 60" X and 23" Y travel
- Strong and rigid – over 7600 lbs of machine mass
- Fixed head for outstanding rigidity
- Standard electronic handwheels with selectable fine/course handwheel resolution
- NMTB40 spindle taper and over 5" of quill diameter
- 250 inch per minute rapid travels
- 7.5 hp continuous spindle motor



Options for TRAK Bed Mills

TRAKing™/Electronic Handwheels

- The feel of manual control of real handwheels, but our electronic handwheels bring the power of the CNC to your fingertips through features such as TRAKing and DO ONE.
- Standard for TRAK DPM SX5P and TRAK FHM



Power Draw Bar

- A Torque-Rite draw bar factory installed
- May be ordered as CAT or NMTB/NST
- Draw bar for CAT type is longer to fit into tool holders that have the tool changer grip, or retention knob removed.



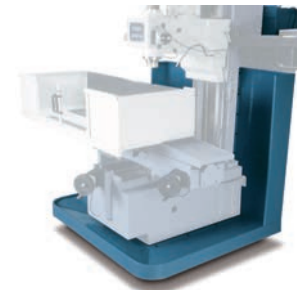
Spray Coolant

- The non-fogging coolant sprayer directs a fine stream of coolant to the tool and workpiece



Vise

- Model DX6 6' Kurt vise and mounting hardware.



Chip Tray/ Splash Shield

- Combines a chip pan mounted to the bed and splash shields mounted to the right and left of the column
- Available factory installed only – not available after shipment



Halogen Work Lamp

- Convenient light with bright, long-lasting halogen bulb



Remote Stop/ Go Switch

- A hand-held switch to stop and continue program run



Glass Scales

- A glass scale mounted on the table and saddle



Tableguard

- Provides an enclosed work-space mounted on the table
- The sliding door is switched to prevent operation of CNC Run with door open

Limit Switches

- Switches and brackets to set maximum travel limits
- Tripping the switch will cause servo motors to shut down
- Standard on model FHM7

Specifications for TRAK Bed Mills

| Model Name | DPM SX2P | DPM SX3P | DPM SX5P | FHM7 |
|--|---------------------------------|---------------------------------|----------------------------|----------------------------|
| Table Size | 49" x 9" | 50" x 10" | 50" x 12" | 76" x 14" |
| T-Slots (Number X Width) | 3 x 16mm | 3 x 16mm | 3 x 16mm | 4 x 16mm |
| Travel (X, Y, Z Axis) | 31" x 16" x 23.5" | 31" x 17" x 23.5" | 40" x 20" x 23.5" | 60" x 23" x 20.5" |
| Quill Diameter | 3.375" | 3.9375" | 3.9375" | 5.06" |
| Maximum Quill Travel | 5" | 5" | 5" | N/A |
| Spindle Taper | R8 | NMTB 40 | NMTB 40 | NMTB 40 |
| Spindle Speed Range RPM | 40-600, 300-5000 | 40-600, 300-5000 | 40-600, 300-5000 | 200-5000 |
| Spindle Center to Column Face | 18" | 19" | 20" | 23.75" |
| Spindle Motor HP | 3 | 5 | 5 | 7.5 |
| Power Requirements, Control | 110V/1P/12Amp | 110V/1P/12Amp | 110V/1P/12Amp | 110V/1P/12Amp |
| Power Requirements, Machine | 220V, 3P, 11 Amp | 220V, 3P, 17.5 Amp | 220V, 3P, 17.5 Amp | 220V, 3P, 37.5 Amp |
| Maximum Weight Of Workpiece | 1320 lbs. | 1320 lbs. | 1760 lbs. | 2200 lbs. |
| Height Of Table From Bottom Of Bed | 33" | 38" | 41" | 38.25" |
| Max Spindle Nose To Table | 27" | 23.5" | 23.5" | 24" |
| Min Height | 90" | 85" | 87" | 91.75" |
| Max Height | 98" | 95" | 98" | 101" |
| Width Of Machine Including Table | 70" | 73" | 94" | 110.5" |
| Overall Length With Electric Door Closed | 64" | 66" | 71" | 93.75" |
| Overall Width Incl Full Table Traverse | 104" | 108" | 136" | 171.65" |
| Overall Length With Electrical Door Open | 72" | 76" | 81" | 119.5" |
| Footprint Of Machine | 23" x 40" | 24" x 44" | 24" x 48.4" | 42.5" x 63" |
| Weight Net / Shipping Lbs. | 3200 / 3500 | 4100 / 4400 | 4400 / 4600 | 7650 / 7975 |
| Rapid Traverse X, Y, Z | 150 IPM | 150 IPM | 150 IPM | 250 IPM |
| Handwheel type | Mechanical, electronic optional | Mechanical, electronic optional | Electronic | Electronic |
| Way Surface Type | Dovetail X,Y, Z | Dovetail X, square Y and Z | Dovetail X, square Y and Z | Dovetail X, square Y and Z |

Maximum Work Capacities In Mild Steel

| | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Drilling Max Capacity | 1" dia | 1" dia | 1" dia | 1" dia |
| Milling Max Capacity | 3 inch ³ /min | 5 inch ³ /min | 5 inch ³ /min | 7 inch ³ /min |
| Tapping Max Capacity | .75" | 1" | 1" | 0.625" |

Why no Tool Changer?

Tool Changers are essential for production work, and that is why we have them on our TRAK Machines for High Mix/Low Volume Jobs. But TRAK Bed Mills are for work done in very small quantities. This work requires that the machine be open and accessible.

We believe that Tool Changers on open (or partly enclosed) machines are labeled unsafe by the language of ANSI B11.8 and B11.23 machine tool safety standards. A machine must be *fully* enclosed to be safe when a Tool Changer is in use. The enclosure must be adequate to *prevent chips and tooling* from being ejected in case of a crash. The enclosure must *prevent an operator* from coming into contact with a tool when there is a possibility of spindle rotation being started by the control or during the tool change mechanism motion.

It is foolish to disregard safety standards established by ANSI.

ProtoTRAK SMX CNC



- The **most powerful** CNC for Toolroom work in the world
- A powerful but easy to use **basic operation** with options you may add to configure your application
- **Optional Parasolid and DXF Converters** save you time by taking the dimensions directly from the drawing
- We recommend this **ProtoTRAK model** for more complex applications such as profiling and pockets

Easy and Powerful Programming The ProtoTRAK Way

| PROG | P/N 0 | TOOL# 1 | 2 AXIS | INCH | | | |
|----------------------|-----------|--------------------------|-----------|-------------|--------------|--------------|----|
| EVENT 0 | | EVENT 1 CIRC PCKT | | | | | |
| PROGRAM NAME | 0 | X CENTER | | | | | |
| SCALE | 1.000 | Y CENTER | | | | | |
| AUXILIARY FUNCTION | NO | RADIUS | | | | | |
| EVENT COMMENTS | NO | DIRECTION | | | | | |
| MULTIPLE FIXTURES | NO | FIN CUT | | | | | |
| DIMENSION DEFINITION | PART GEO | FEEDRATE | | | | | |
| | | FIN FEEDRATE | | | | | |
| | | TOOL # | | | | | |
| X CENTER : [] | | | | | | | |
| F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| PAGE FWD | PAGE BACK | DATA FWD | DATA BACK | DATA BOTTOM | INSERT EVENT | DELETE EVENT | |

Powerful Canned Cycles

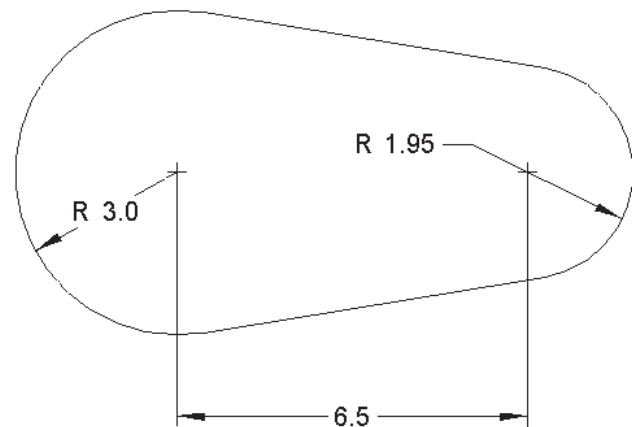
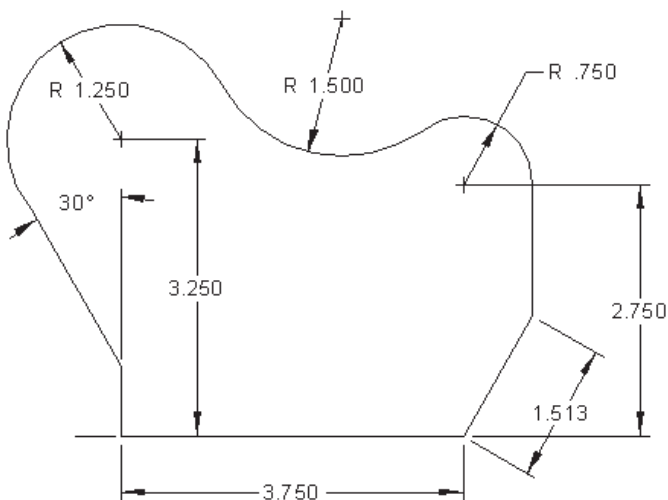
(O indicates optional)

- Position
- Drill
- Bolt Hole
- Mill
- Arc
- Circle pocket
- Rectangular pocket
- Irregular pocket
- Face Mill
- Circular profile
- Rectangular profile
- Irregular profile (O)
- Circle Island (O)
- Rectangular Island (O)
- Irregular Island (O)
- Helix (O)
- Thread Milling (O)
- Engraving (O)
- Face Mill (O)

Auto Geometry Engine

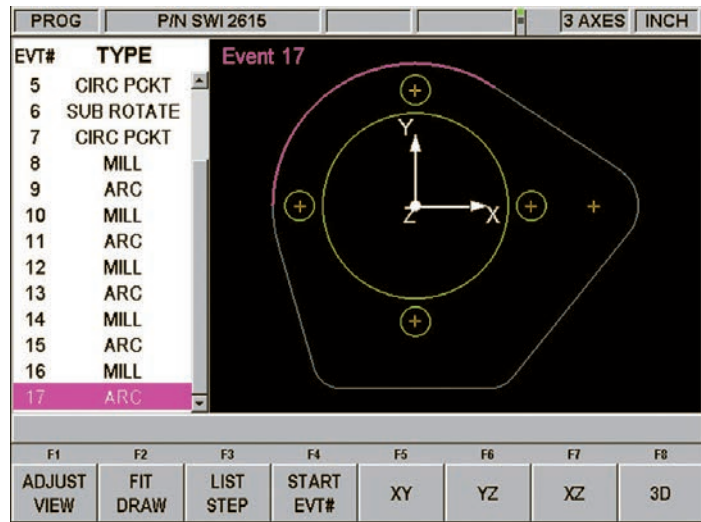
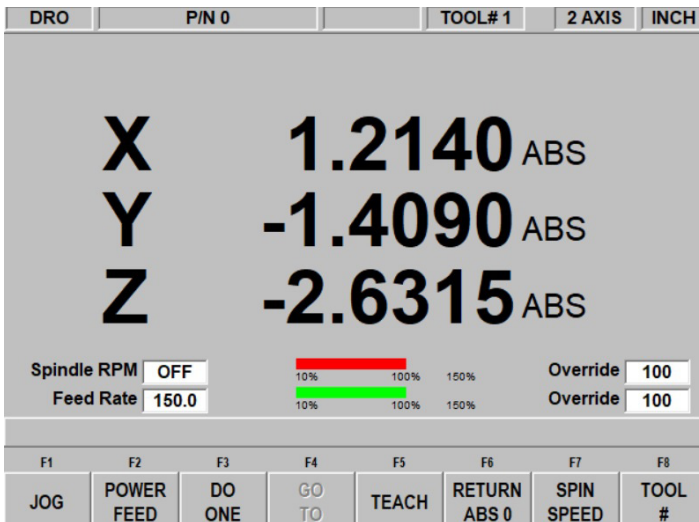
The Auto Geometry Engine (A.G.E.) is powerful software that automatically fills in missing print dimensions as you program. It is CAD capability embedded into CNC programming.

With A.G.E. you can make easy work out of programming incomplete prints or part sketches like the ones below. The A.G.E. doesn't take more time to use, it works automatically as you program.



Powerful Capability

Only in the ProtoTRAK

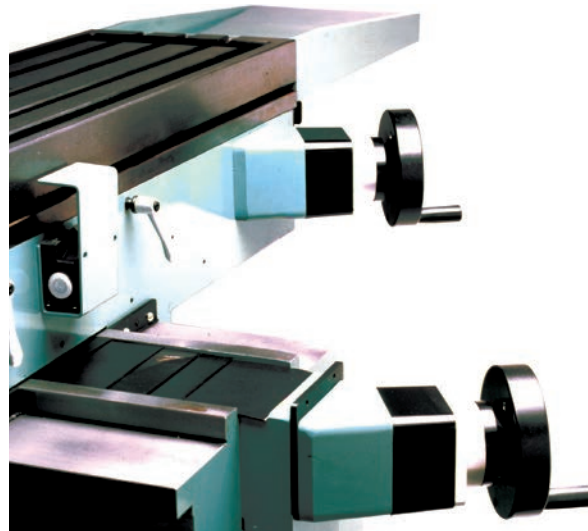
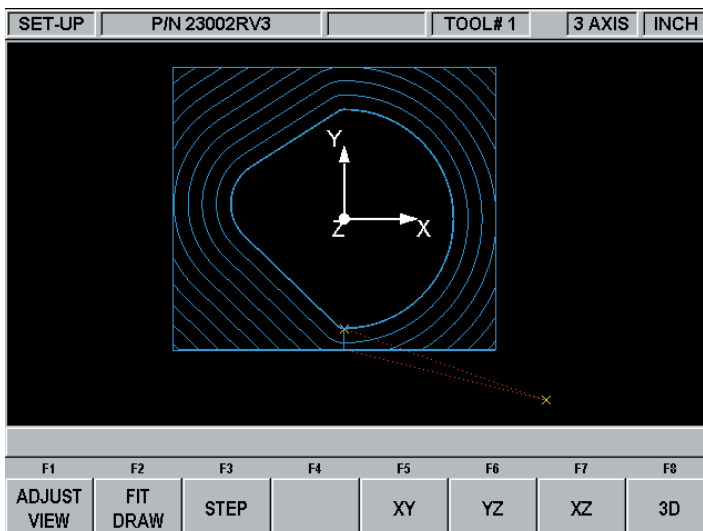


CNC Power, even when working manually

- Incremental and Absolute Referencing
- Large, easy-to-read dimensions display
- Convenient features such as Jog, Teach and Power Feed

List-Step Graphics

- See a full screen view of your programming progress with the push of a button
- Use the list step graphics to easily isolate program problems



Profiles and Pockets

- Easily program pockets and profiles of all shapes with powerful canned cycles

Electronic Brains in the Handles

- The feel of manual control of real handwheels, but our electronic handwheels bring the power of the CNC to your fingertips through features such as TRAKing and DO ONE.

| EDIT | | P/N SWI0520 | | TOOL# 4 | | INCH | |
|------|-------|-------------|-----------|------------|------------|------------|-------------|
| EVT# | TYPE | TOOL# | FEED RATE | X BEGIN | Z BEGIN | X END | Z END |
| 1 | TURN | 1 | 5.000 | 3.1000 abs | 4.0000 abs | 0.0000 abs | 0.0000 inc |
| 2 | TURN | 1 | 5.000 | 1.5000 abs | 4.0000 abs | 0.0000 inc | 3.5000 abs |
| 3 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | 3.0000 abs |
| 4 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | 2.5000 abs |
| 5 | ARC | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 2.0000 abs | -0.2500 inc |
| 6 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | 1.5000 abs |
| 7 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 3.0000 abs | 0.7500 abs |
| 8 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | -0.2500 inc |
| 9 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | -0.2500 inc |
| 10 | TURN | 1 | 5.000 | 0.0000 inc | 0.0000 inc | 0.0000 inc | -0.2500 inc |
| 11 | DRILL | 3 | 3.000 | | | | 1.7000 abs |
| 12 | BORE | 4 | 2.000 | | | 0.8750 abs | 1.9500 abs |

TOOL #: 1

F1 F2 F3 F4 F5 F6 F7 F8

TRAKING CNC RUN SHOW ABS SHOW INC SHOW PATH SHOW PROG RETURN

Spreadsheet Editing

- View data for your whole program at once
- Sort and make changes to a group of events with the press of a button

| RUN | | P/N SWI 2615 | | TOOL# 5 | | 3 AXES INCH | |
|---------------|--|--------------|------------|---------|------------|-------------|-------------|
| Event 9 (ARC) | | X | 3.1725 abs | Y | 0.3325 abs | Z | -0.5500 abs |

Spindle RPM 1255 Feed Rate 12.5

F1 F2 F3 F4 F5 F6 F7 F8

TRAKING CNC RUN SHOW ABS SHOW INC SHOW PATH SHOW PROG RETURN

Tool Path Graphics

- See where the control plans to move the tool prior to machining
- Easily catch mistakes with error messages, colors, and selectable views

| PROG I/O | | 3 AXES INCH | |
|-----------------|----------------|----------------------|-------------|
| OPEN | Look In: | C:\2Parts\1Shop | |
| PROG2PAGE8.PT4 | PROG3PAGE8.PT4 | A: 2Parts | |
| PROG5PAGE13.PT4 | SP031001-1.PT4 | C: 1Shop | |
| SP031001-2.PT4 | SP031001-3.PT4 | Network Neighborhood | |
| File Name: | Open As: | G Code .GCD | |
| F1 | F2 | F3 | F4 |
| TAB | DATA FWD | DATA BACK | OPEN FOLDER |
| F5 | F6 | F7 | F8 |
| | | OPEN FILE | RETURN |

Advanced File Management

- Access different drives, copy and rename files and look at part graphics before opening a file
- Back up programs easily with the automatic back up routine

F1 F2 F3 F4 F5 F6 F7 F8

XY VIEW XZ VIEW YZ VIEW 3D VIEW VERIFY PART MAKE PART RETURN

Verify Machining Simulation

- Verifies ProtoTRAK or G-Code generated programs for errors
- Watch tools machine and display the finished part

Networking

- Network your ProtoTRAK with a server or another ProtoTRAK
- File, share, or back-up programs from your machine
- Collaborate easily - centralized file management helps assure revision control

Run-Time Clock

- Easily see on the ProtoTRAK display how much time remains before the control is programmed to stop for a tool change

Not all features are found on all ProtoTRAK models and some features are optional. See the specifications.

DXF Converter Option

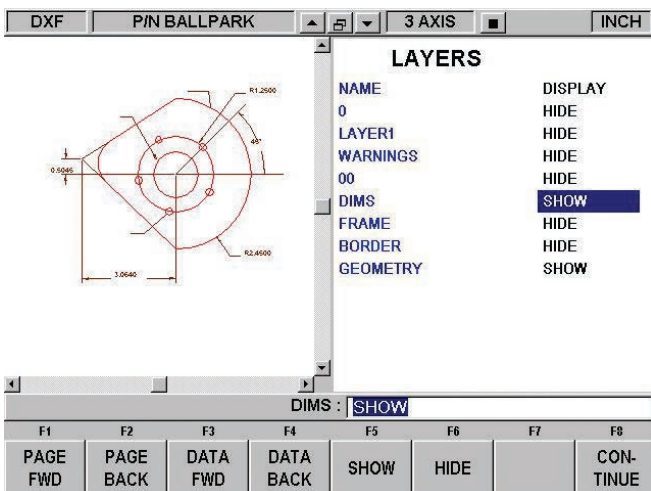
A Simple Process that your machinists control

Easily convert dimensions from a DXF or DWG file into a ProtoTRAK program.

- Works with ProtoTRAK SMX CNCs on the shop floor or with the ProtoTRAK Offline system
- Easy process that ProtoTRAK machinists can learn in minutes
- Milling and turning versions available

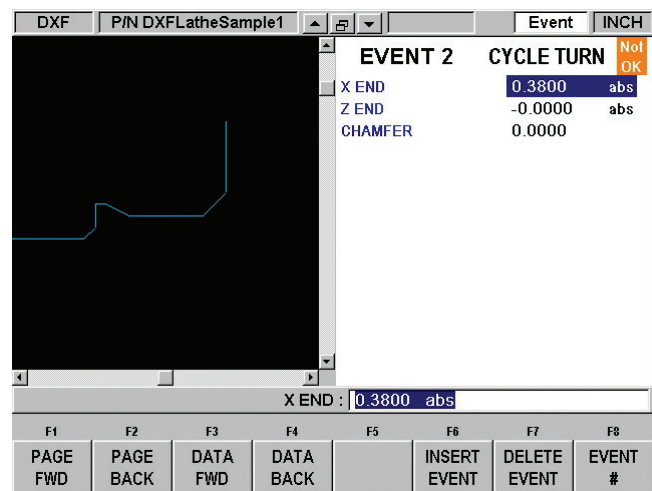
Layer Selection

- View the entire file and select the layers you want to machine



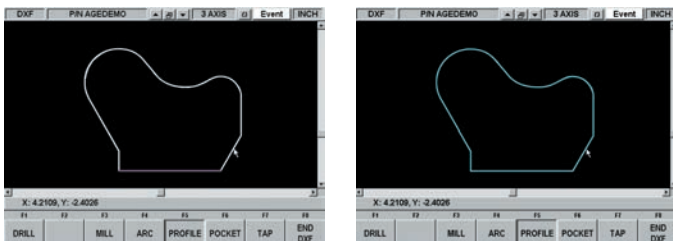
Interactive, Prompted Selection of Geometry

- Program events in the order you choose
- Once the event type and dimensions are loaded it's easy to fill in the prompts



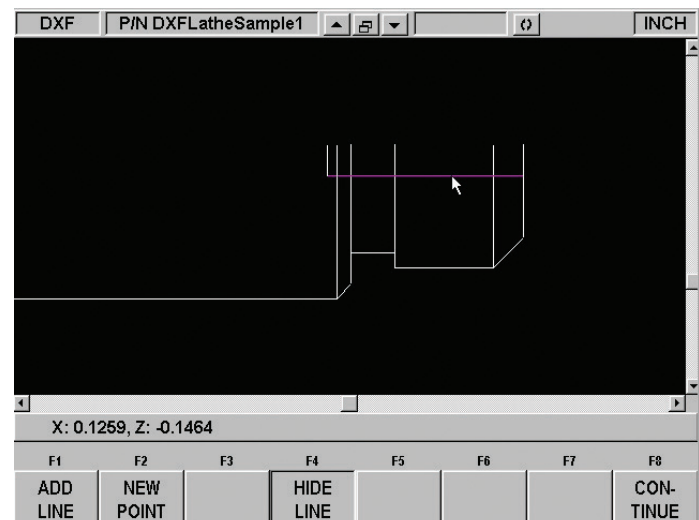
Chaining

- Program the entire geometry of Pocket or Profile peripheries with just two clicks – tell ProtoTRAK where to start then tell it which direction to go. The rest of the connected events are loaded automatically
- The seven events below were programmed as easily as clicking two lines



Line Editing

- If lines drawn in a DXF file can't be machined as drawn, the DXF converter enables you to insert or hide lines to get past these problems. No need to go back to the CAD department.



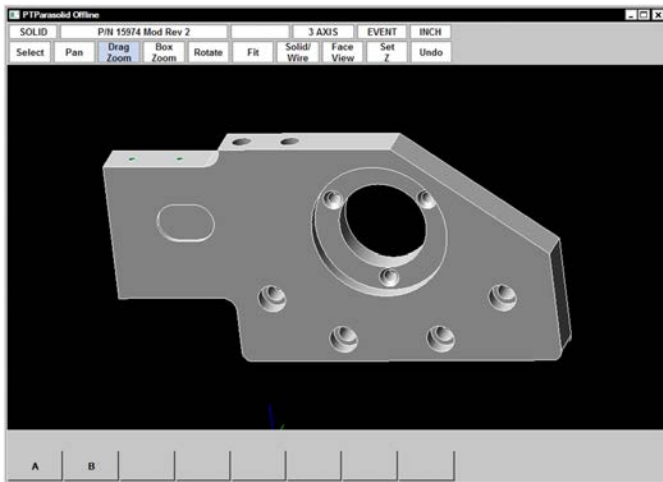
Parasolid Converter Option

Easily generate ProtoTRAK mill programs from Parasolid 3D CAD files.

- Save ProtoTRAK programming time – easy to do on the shop floor with your ProtoTRAK SMX CNC
- Input .x_t format (Parasolid) 3D CAD files
- Easy process that ProtoTRAK machinists can learn in minutes

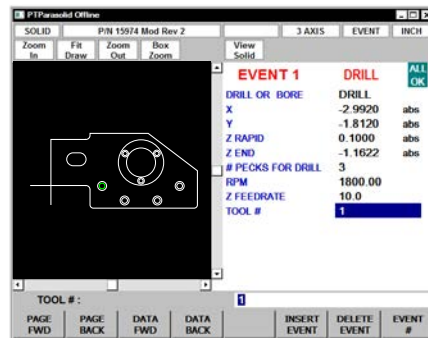
Intuitive 3D Model

- Powerful viewing tools include Zoom, Pan, and Rotate
- Enhances understanding and facilitates programming



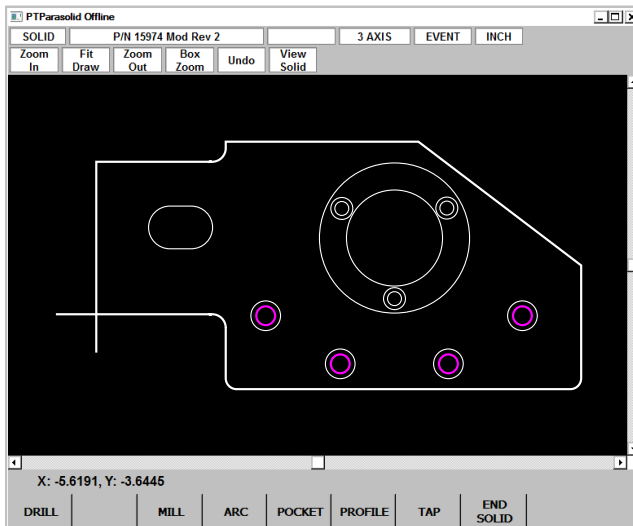
Interactive, Prompted Selection of Geometry

- Program events in the order you choose – select event type and click on the geometry (excludes geometries with bottom contouring)
- X and Y dimensions loaded automatically
- Point and click to load Z dimensions
- Automatically compensates for drill point length



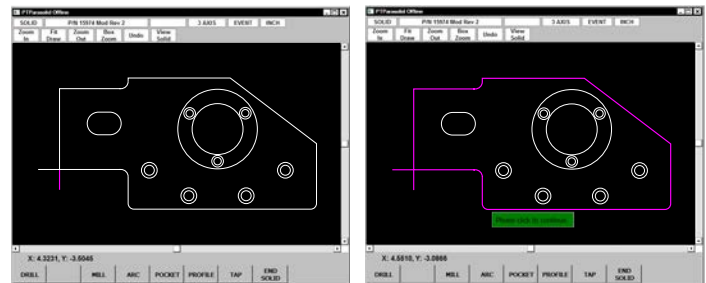
Event Groups

- Create event groups of items you want to machine the same way
- Click similar circular geometries, create an event, and the data from the first event will automatically fill in for the rest of the events



Chaining

- Program the entire geometry of Pocket or Profile peripheries with just two clicks – tell ProtoTRAK where to start then tell it which direction to go in. The rest of the connected events are loaded automatically
- The 16 events for the below profile were loaded by simply clicking two lines



Specifications for the ProtoTRAK SMX for Mills

(O) – optional feature

Control Hardware

- Two or three-axis CNC, three-axis DRO
- Real handwheels for manual operation
- 10.4" color active-matrix screen
- Industrial-grade Pentium® processor
- 1 GB Ram
- 4 USB connectors
- RJ45 port and Ethernet card (O)
- Override of program feedrate
- Override of program spindle speed (O)
- LED status lights built into display
- USB thumb drive flash memory 512 MB or more
- Uncluttered front panel with few hard keys
- 110V, 1P, 12A

Software Features – General Operation

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

DRO Mode Features for Manual Machining

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

Program Mode Features

- Geometry-based programming
- Tool path programming (O)
- Scaling of print data (O)
- Multiple fixture offsets (O)

- Programmable 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
- Canned cycles:
 - Position
 - Drill
 - Bolt Hole
 - Mill
 - Arc
 - Circle pocket
 - Rectangular pocket
 - Circular profile
 - Rectangular profile
 - Irregular profile (O)
 - Irregular pocket (O)
 - Circle Island (O)
 - Rectangular Island (O)
 - Irregular Island (O)
 - Helix (O)
 - Thread milling (O)
 - Engraving (O)
 - Tapping (O)
 - Face Mill (O)
- Programmable Spindle Speeds (O)
- 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 Drill to Tap Event (O)
- Copy Rotate (O)
- Copy Mirror (O)
- Auto Geometry Engine™ (O)

Edit Mode Features

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

- Trial run at rapid
- 3D G Code file run
- Real time run graphics with tool icon
- Countdown clock to next pause or tool change (O)
- TRAKing of programs during program run (O)

Program In/Out Mode Features

- CAM IN program converter
- CAM OUT converter to run ProtoTRAK programs on different controls (O)
- Converter for prior-generation ProtoTRAK programs
- DXF / DWG Converter (O)
- Selection of file storage locations
- Automatic file back up routine
- Preview Graphics for unopened files
- Networking via RJ45 port (O)
- Program Storage to USB Flash Drives



Options for the ProtoTRAK SMX

Advanced Features Option

- Verify Machining Simulation
- Auto Geometry Engine™
- Spreadsheet editing
- Global data change
- Scaling of print data
- Multiple fixture offsets
- Event comments
- 3-axis conversational programming
- G Code editor
- Program run time estimation clock
- Additional Canned Cycles:
 - Irregular Profile
 - Irregular Pocket
 - Circle Island
 - Rectangular Island
 - Irregular Island
 - Helix
 - Thread Milling
 - Engraving
 - Copy Drill to Tap
 - Face Mill
 - Mirror of programmed events
- Copy with or without offsets
- Copy Rotate
- Copy Mirror
- Clipboard to copy events between programs

DXF File Converter

- 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

Networking Option

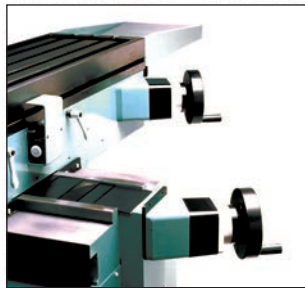
- Networking via RJ45 port

CAM OUT Converter

- Regenerate a CAM file with revisions from the shop floor

Auxiliary Functions Option

- Program control of coolant
- Spindle off
- Output to programmable indexer or rotary table



TRAKing/Electronic Handwheels

(Our favorite option!)

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

Parasolid Converter Software

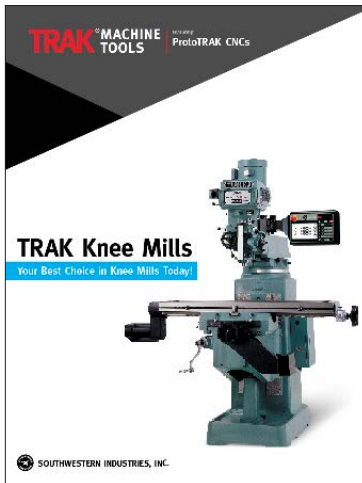
- Generate programs from solid files
- Process commonly used .x_t files
- Dozens of time-saving features

Offline Programming

- The ProtoTRAK SMX user interface for Windows® PC
- Program and modify files from current and past ProtoTRAK models

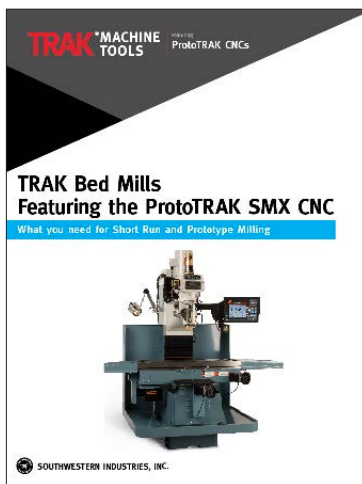


More TRAK Machines for Short Run/Prototype work



TRAK Knee Mills

- The best built, best supported knee-type milling machines you can buy
- Factory integrated ProtoTRAK CNC
- 5 models starting at only \$19,995



TRAK Bed Mills

- Highly recommended for 3-axis CNC Toolroom and prototyping applications
- Solid ram moves long the column providing mass for heavy cuts
- 4 models starting at around \$32,000
- Travels up to 60" in X, 23" in Y and 20.5" in Z



ProtoTRAK KMX Upgrades

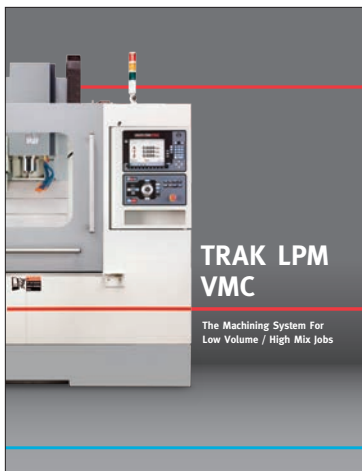
- Upgrade your older ProtoTRAK CNC with the all new ProtoTRAK KMX
- Upgrades for previous generations of retrofits, TRAK Knee Mills and TRAK Bed Mill starting from only \$4295
- Exciting new features will give you a great boost in productivity!

Also from TRAK Machine Tools: Unique Solutions for Low Volume/High Mix Production



TRAK 2^{op}

- Productive: Get more from the people you already have!
- Versatile: Reduce your cost of production on a wide variety of jobs



TRAK LPM VMC

- A complete system that integrates the Control, Tool Setting and Workholding
- Reduce the labor spend in Setup
- Change from job to job in a few minutes

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