TRAK® MACHINE TOOLS

Featuring
ProtoTRAK CNCs

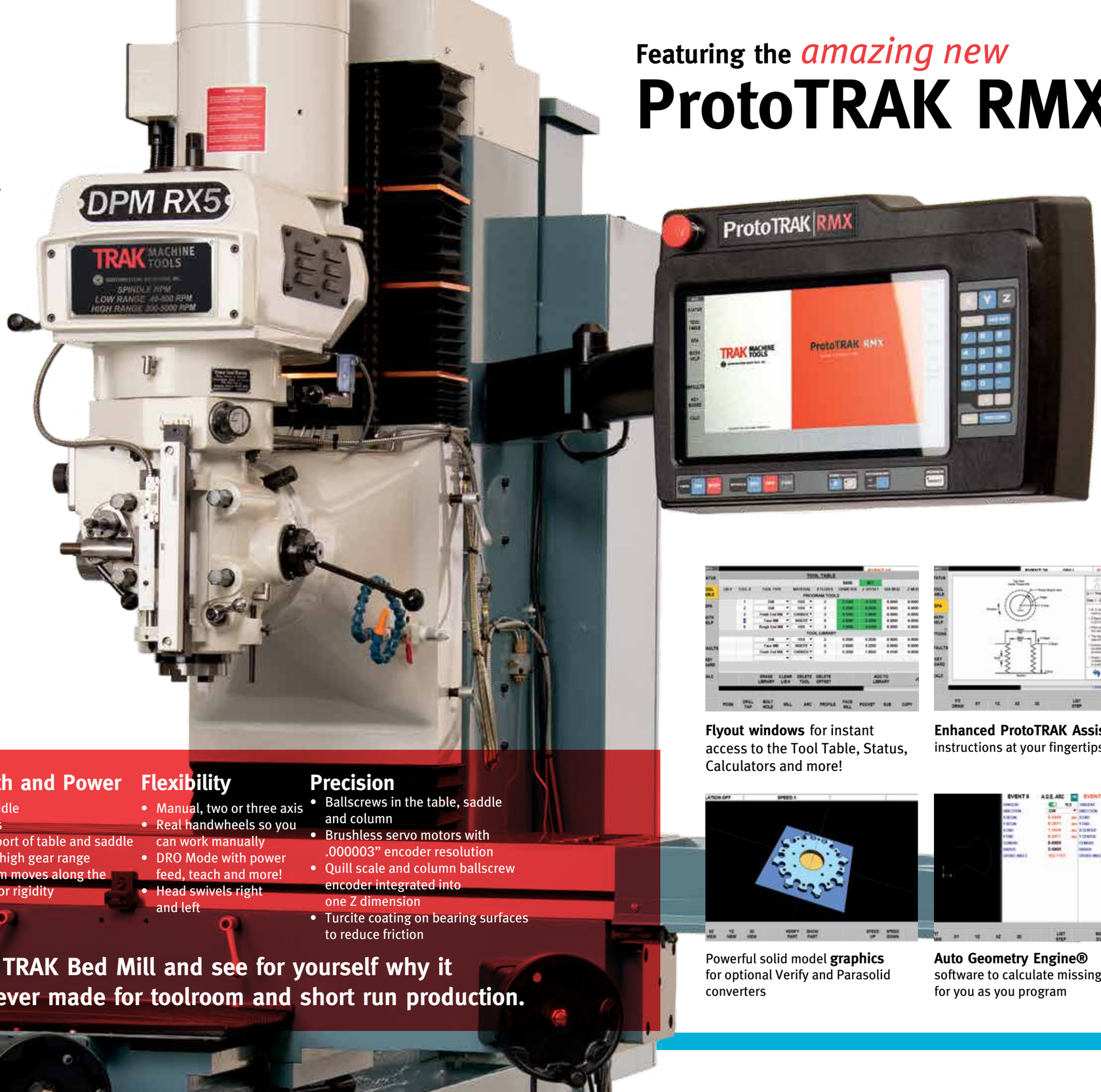
Introducing

TRAK DPMRX Bed Mills

Featuring the NEW

ProtoTRAK RMX

TRAK DPMRX Bed Mills



Productivity

- ProtoTRAK RMX CNC integrated into the machine at the factory
- TRAKing – control of program run
- Programmable Spindle Control

Strength and Power

- Wide saddle
- Box ways
- Bed support of table and saddle
- Low and high gear range
- Entire ram moves along the column for rigidity

Flexibility

- Manual, two or three axis
- Real handwheels so you can work manually
- DRO Mode with power feed, teach and more!
- Head swivels right and left

Precision

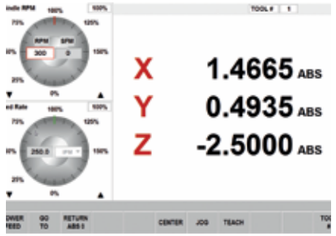
- Ballscrews in the table, saddle and column
- Brushless servo motors with .000003” encoder resolution
- Quill scale and column ballscrew encoder integrated into one Z dimension
- Turcite coating on bearing surfaces to reduce friction

Get your hands on a TRAK Bed Mill and see for yourself why it is the best machine ever made for toolroom and short run production.

Featuring the *amazing new*

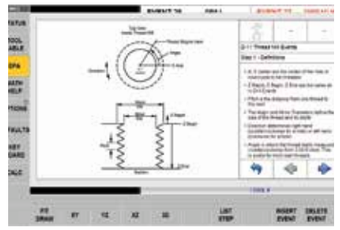
ProtoTRAK RMX CNC

Touchscreen for an extraordinary user experience that will keep you working fast



Powerful Features for **manual milling**

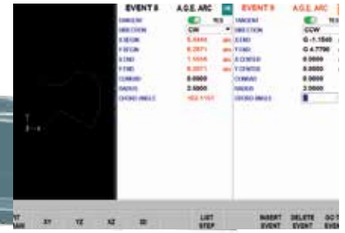
Flyout windows for instant access to the Tool Table, Status, Calculators and more!



Enhanced ProtoTRAK Assistance – instructions at your fingertips

Defaults teach the ProtoTRAK RMX your machining style

Powerful solid model **graphics** for optional Verify and Parasolid converters



Auto Geometry Engine® software to calculate missing data for you as you program

Easy, prompted programming **events** with graphics that update while you program

The Perfect blend of machine, CNC and you

The ProtoTRAK RMX keeps you in control every step of the way

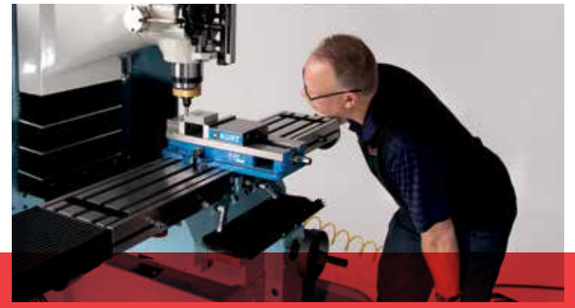
Machinists love to use ProtoTRAKs and it is no wonder. You get the automation you need to be efficient in an elegant interface that is easy to learn and use. At the same time it provides you with the manual capability that you need for so many things you do in a day.

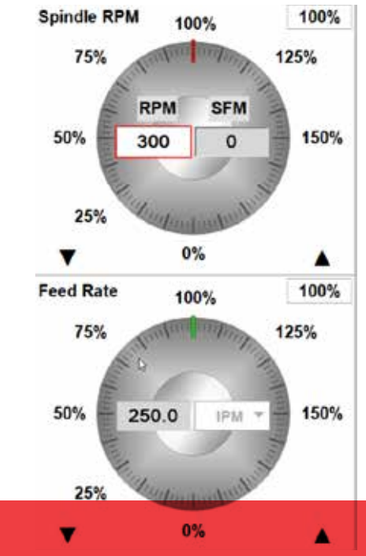
Choose the level of automation

Work manually. Use a 2-axis CNC with manual Z. Set up and run 3-axis CNC. Program it yourself or import a G-code, CAM, CAD or Solid file. It's all there, waiting for you to make the choices that are best for your work.

Manual quill

Nothing replaces the feel of a manual quill for fine work. The Quill Scale and Ram Position Encoder are coordinated so that you get a single Z Dimension Readout that integrates both.





Real handwheels for the table and saddle

Whether they are mechanical or Electronic* you can use the handwheels for manual positioning as well as machining. The DRO Mode of the ProtoTRAK RMX CNC makes manual machining more productive with features such as Teach, Power Feed, Go To and Center Calculation.

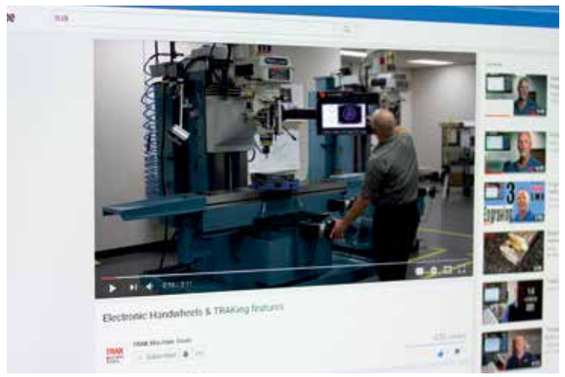
Overrides

You program spindle speeds and feedrates, but don't sweat getting them perfect. When you run you have really cool graphical overrides to make adjustments.

See our video at **www.trakmt.com/RMX**

Editing on the fly

Getting into your program to make changes is quick and easy. From any screen, tap PROG. With a few swipes you're at the event you want to change. Tap the data you want to change and put in the new data. Done. Start machining again.



See the video at www.trakmt.com/RMX
Better yet, get a demo and play with it yourself!

TRAKing®

*(optional on Models DPM RX2 and RX3)
We simply cannot say enough about this awesome feature.

Picture this: you've written the program. Looked at the toolpath. Everything looks good, so you turn on the spindle and start to run.

But...you have TRAKing. So before you press the GO button you press TRAKing and then grab the handwheels. Talk about being in control! As you crank, the ProtoTRAK runs the program X, Y and Z. You move the feed fast or slow. You can go forward or backward through the toolpath. You can stop and turn off the spindle to move a clamp or brush off chips...you're in control, not the CNC.

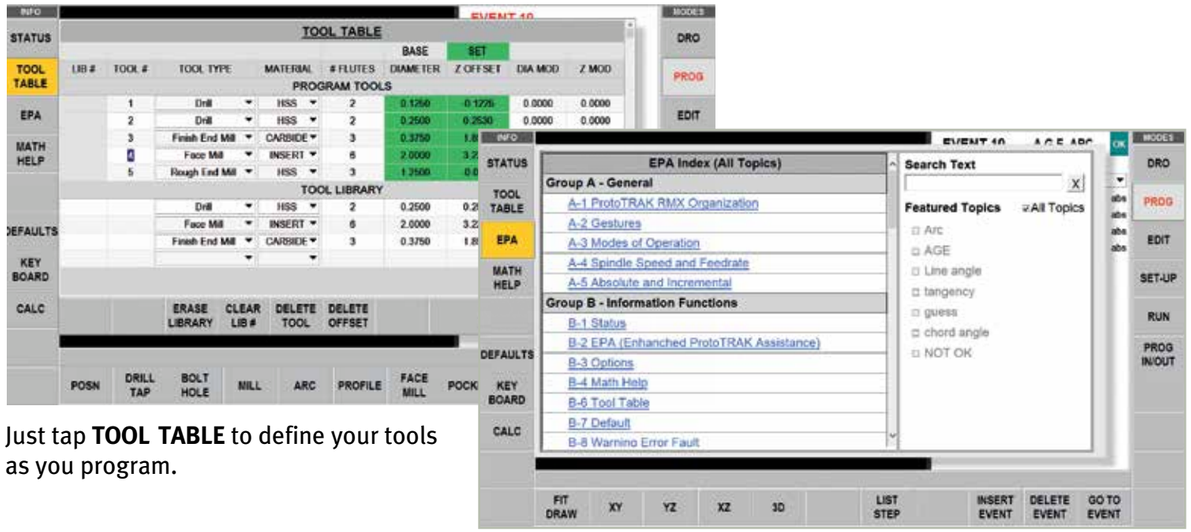
That's TRAKing.

Introducing the ProtoTRAK RMX Touchscreen

as only ProtoTRAK could do it

Flyout Windows

Tap an Info Key and a Flyout Window appears.
Tap it again and you're back to where you started.



Just tap **TOOL TABLE** to define your tools as you program.

Enhanced ProtoTRAK Assistance in a Flyout Window gives you the help you need on demand.

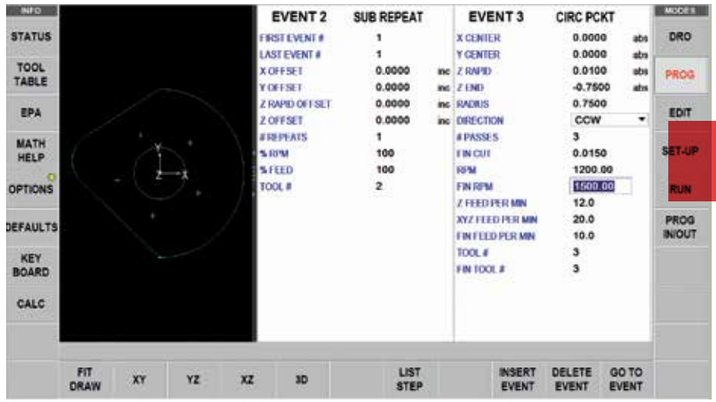
There's more to Flyout Windows!

Status with in/mm switching on the fly, 2 to 3 axis conversion and more
Math Help with 22 separate easy-to-use routines to calculate print dimensions
Options for quick access to advanced functions
Defaults that customize the ProtoTRAK to your machining style
Keyboard for letters, numbers, symbols, etc
Calculator for simple math with auto load of data

See more on flyout windows at our website www.trakmt.com/RMX

Swipe to Navigate, Tap to Enter

Simple changes to the program have never been easier.
Move easily through your program by swiping - the line color in the drawing shows you which event you are viewing.



Tap to select the data you want to input or change.

See our touchscreen video at www.trakmt.com/RMX

Interact with your part graphics

You can zoom, pan or rotate your drawings and 3D models by using the touchscreen.

See more about tap, swipe, pan, zoom and other touchscreen gestures on our website www.trakmt.com/RMX
Or, better yet, get a demo in your shop. Talk to your TRAK Machine Tools Rep. Chances are, he'll have a Demo Box with him!

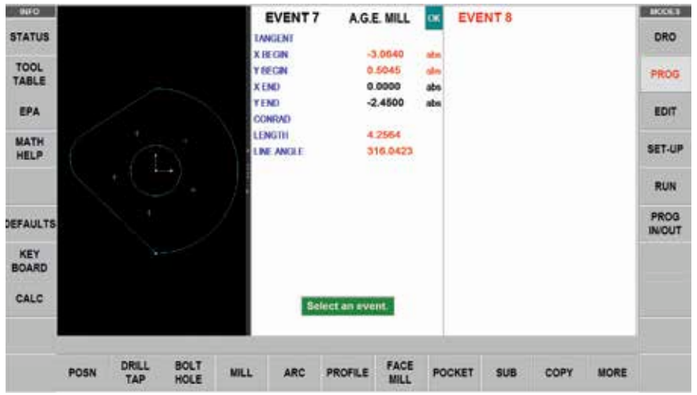
Programming the ProtoTRAK RMX

Powerful and always easy

Programming the ProtoTRAK RMX is simply a matter of choosing the geometry from among the canned cycles and then answering the prompts one by one. Everything is in plain language with no codes for you to memorize.

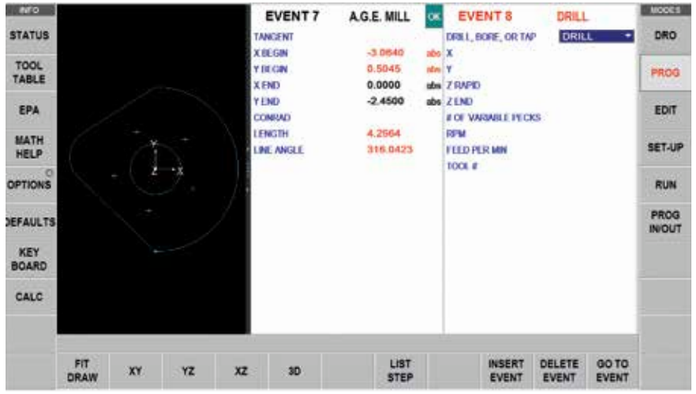
Events

Programming is a simple process of selecting the Event and then describing the geometry from print data.



Tap the event you want

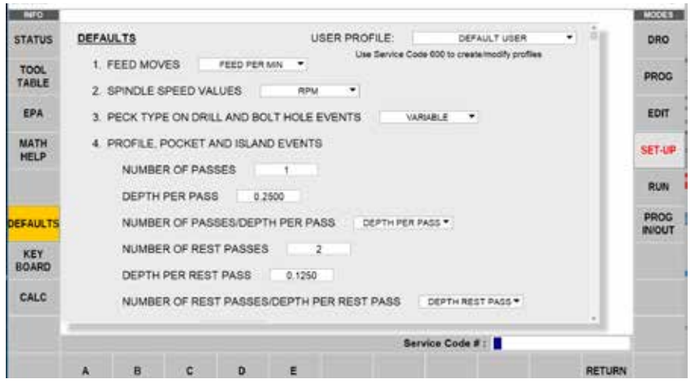
...and fill in the prompts



You may program complete prints or just write simple programs for single operations.

It's that easy!

Defaults

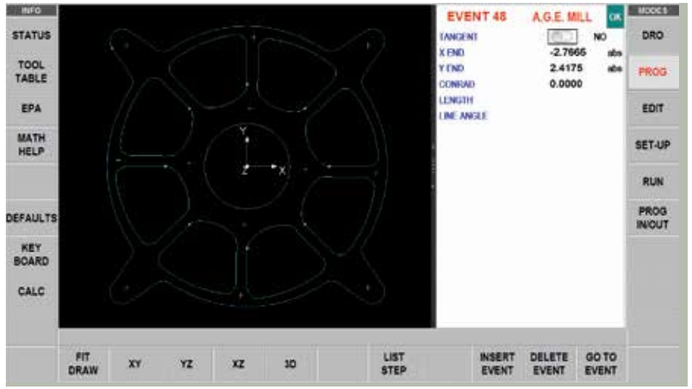


Defaults customize the programming to your style. The prompts will autofill with the choices you make in Defaults, making programming even faster and easier.

Options

Tap Options while programming the event and you'll have choices for how the geometry is machined.

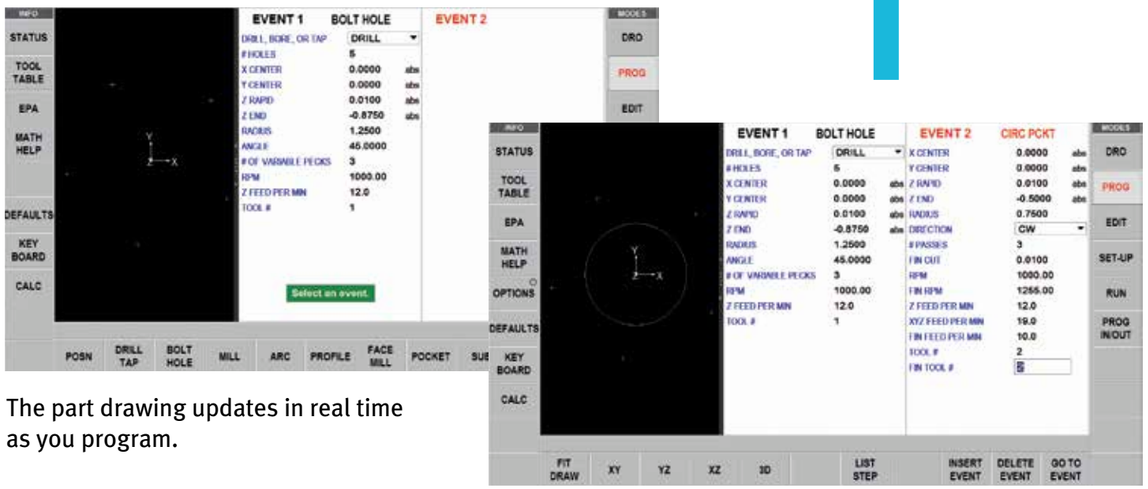
Canned Cycles



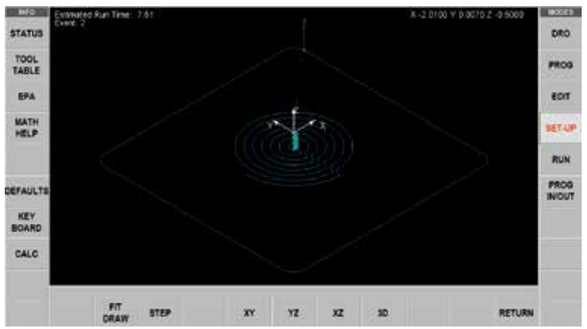
There are over 25 canned cycles that make it easy to program even complex shapes right on the shop floor.

Programming the ProtoTRAK RMX

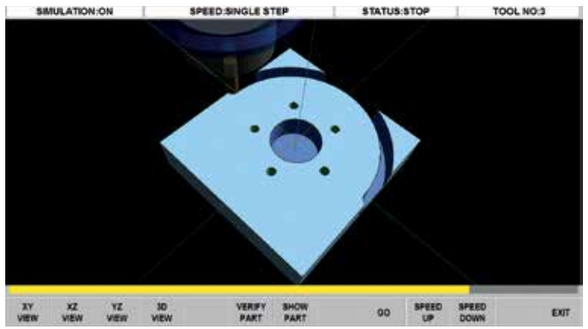
Graphics keep you working fast



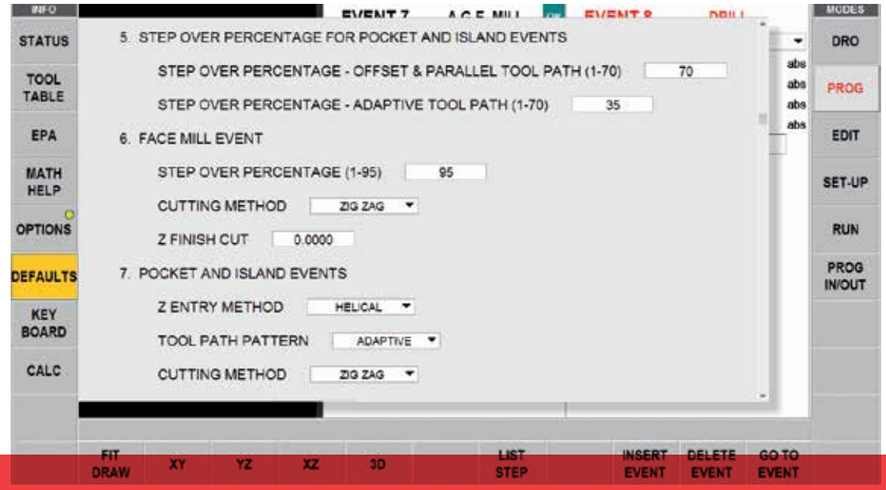
The part drawing updates in real time as you program.



Tool Path gives you a clear idea of where the tool will go with X, Y & Z locations given as you step forward and backward through the program.



Optional Verify shows you a solid model tool path simulation of what you've programmed



Adaptive Toolpath

The optional Adaptive Tool Path works with the Defaults you set to keep the load constant on the cutter.

The pocket on the left has a standard tool path. The pocket on the right was machined with **Adaptive tool path.**

You have to see Adaptive to appreciate it. See our video at www.trakmt.com/RMX
Better yet, call for a demo.

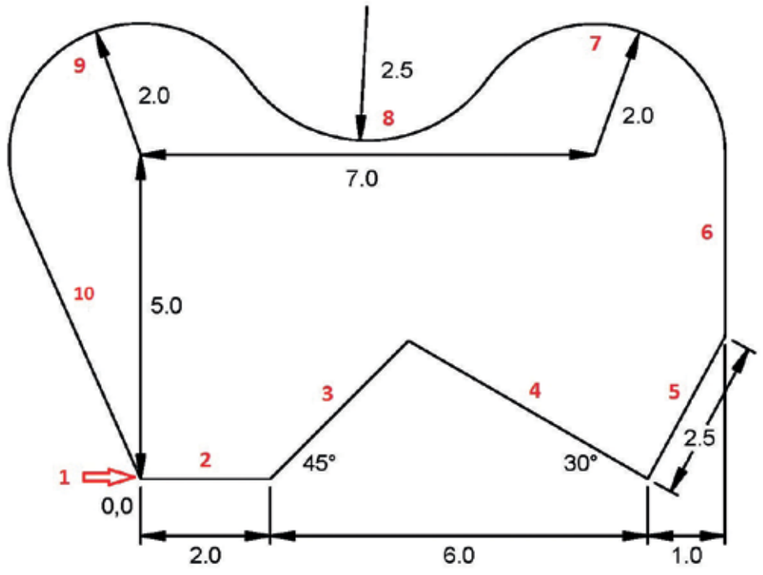
Auto Geometry Engine (A.G.E.)

CAD power while you program...only in the ProtoTRAK

Sometimes you get prints that that don't have the data you need. So before you can make the part, you've got to track down the originator of the print and get him to redo it for you.

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

This print lacks the dimensions for several intersections and even one arc center.



Not called out on print:

- Intersection of lines 3 and 4
- Intersection of lines 5 and 6
- Intersection of arcs 7 and 8
- Center of arc 8
- Intersection of arcs 8 and 9
- Intersection of arc 9 and line 10

Yet you can easily program the complete profile using A.G.E.

Here is a snapshot of how it works

The line is dashed to let us know that is the A.G.E.'s best guess for what we want. Solid means it isn't guessing, it knows from what we've given it.

The data in red were calculated by the AGE. The data in black were entered by us.

G means we guessed. And the A.G.E. uses guesses to help solve for missing dimensions.

Not OK

NOT OK tells us that event 9 isn't yet fully defined. Stay tuned, the A.G.E. will define it with a little more info.

Once we define Event 10, the A.G.E. was able to calculate Event 9.

And thanks to the new touchscreen, A.G.E. now has

Tap to Guess

We tapped the screen here and the A.G.E. entered the data from our fingertip as a guess.

Yes, really!

Notice that the arc has become solid. Also, the red numbers show that most of the data was calculated for you by the A.G.E.

OK

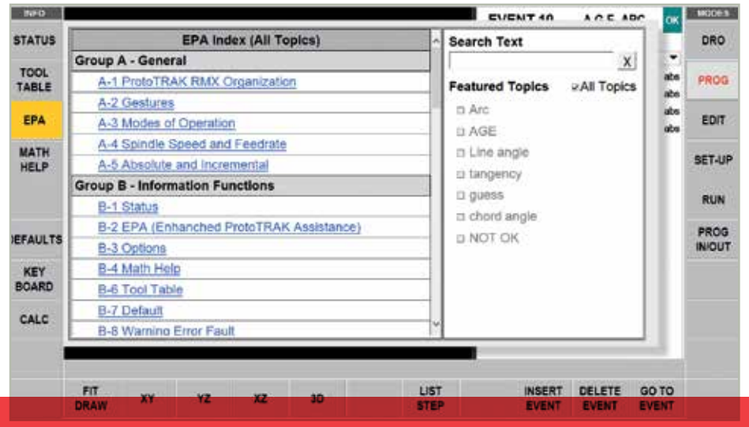
OK means the geometry is complete so we can get ready to run the part. And we didn't have to go back to the CAD guy.

It really is that good!

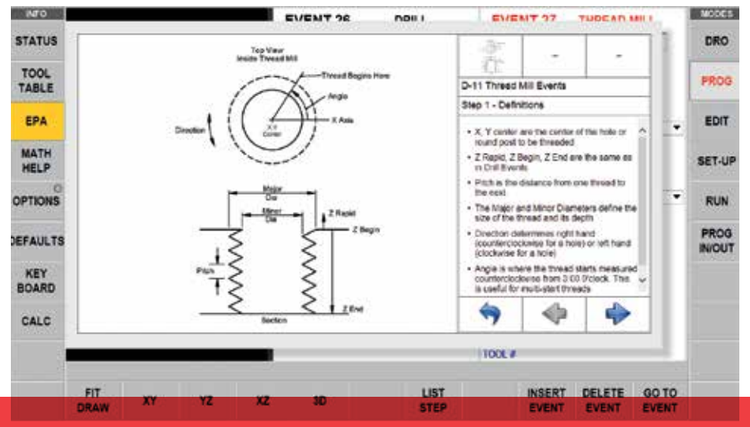
The foregoing is just a bit of the programming for the part above. You can see the rest at www.trakmt.com/RMX
Better yet, call us for a demo and play with it yourself.

Enhanced ProtoTRAK Assistance (E.P.A.)

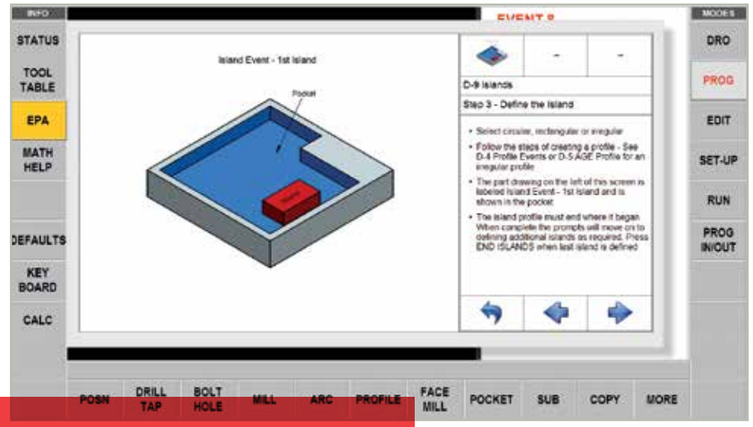
The ProtoTRAK RMX helps you use itself



The EPA will help you get the most out of your ProtoTRAK RMX. It is context-sensitive information that you access by tapping EPA Info screen.

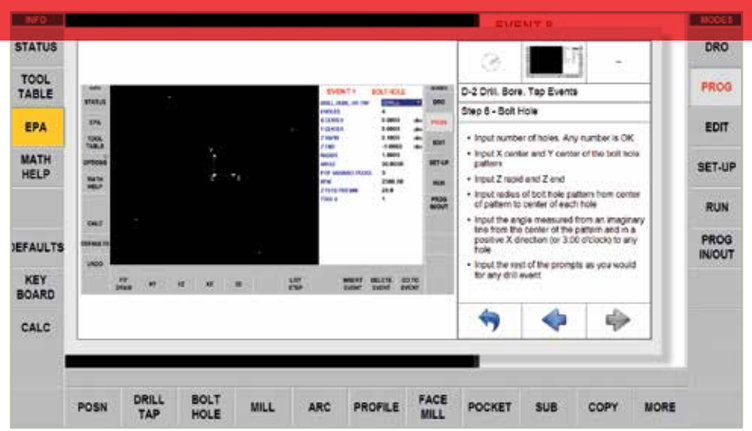


With EPA, you're never stuck! Diagrams will guide you through some of the more complex prompts.



Bulleted instructions provide you with a summary of what to do.

Screen shots help you apply the instructions right away because they mimic what you are looking at when you needed help.



Videos supplement the help when nothing else will do.

EPA

Whether you need to learn something new about the control, or want to double-check yourself just to be sure, the EPA will help you keep making parts.

The EPA is an extraordinary resource that we will continue to refine and expand over time. You will have access to additional EPA content through software updates. The updates to the EPA that help you run the ProtoTRAK will be at no charge. It is a commitment to your satisfaction that you can only find in a ProtoTRAK.

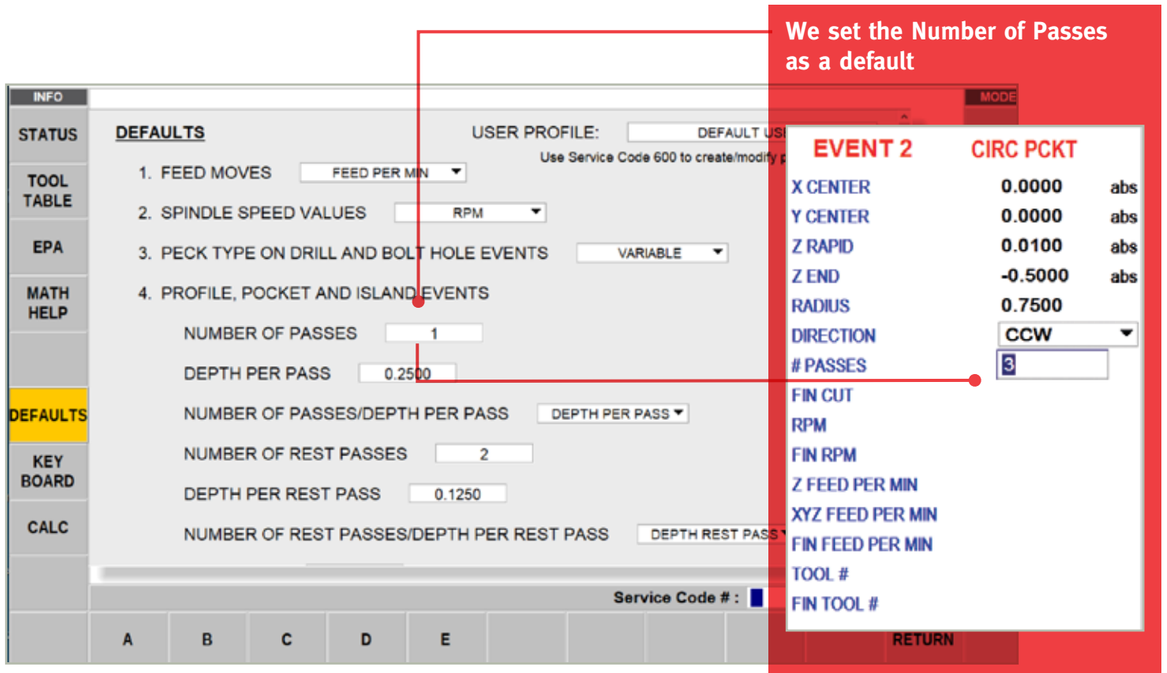
Check with us at www.trakmt.com/RMX to stay on top of what is happening with this tremendous new feature that you won't find anywhere else!

Make it personal with DEFAULTS

The ProtoTRAK RMX is the only CNC that you can mold to your style

You have a style. The work you do, the material you cut, the tooling you use, they all make up your style. The ProtoTRAK RMX is the world's only CNC that you customize to your style. You do this easily by setting Defaults.

Setting Defaults makes programming even easier by loading in your preferences as you program. Once you select the event, your preferences are already there for you. If you're mentoring someone who is new to the craft, you can set the Defaults to help your student work within the parameters you define.



We set the Number of Passes as a default

Now when we program, those values are already there.

Change Defaults whenever it suits you

You're not stuck with the settings you make. You can easily change the preferences by entering another value at the prompt or tapping Options. If you wish to set a new Default, simply select the Defaults Info Key and enter the preference.

Here we previously set Variable Pecks as the Default. But when we tap Options, we can choose to replace the Default with Fixed or Chip Break Peck for this event.

You don't have to set every Default, we've set the most common ones here at the factory. But if you choose, you can use Defaults to:

- Set spindle speed programming at RPM or Surface Speed.
- Set Feedrate programming for Feedrate per Minute or per Tooth.
- Set step-over percentages for Pockets and Face Mill Events.
- Set Z entry as Plunge, Zig-Zag or Helical.
- Choose between 2 or 3 axis CNC at startup...
- ...and more!

You will love how easy it is to work with Defaults and how much time they will save you in programming, but there is only so much we can show you on a piece of paper. See our website at www.trakmt.com/RMX or call for a Demo in your shop or our showroom. Or just give your TRAK Machine Tools Sales Rep a few minutes the next time he comes by. Chances are he has a Demo Box with him!

DEFAULTS make programming even easier.

DPMRX2

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

- R8 spindle taper
- 3 hp continuous spindle motor

Plus the same features on all our bed mills:

- Generous Z-axis CNC travel
- Manual, 2-axis CNC, 3-axis CNC
- Real handwheels so you can work manually
- Solid ram moves along the column providing mass for heavy cuts
- 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

DPMRX3

Our most popular bed mill due to it's combination of low price and great specs

- 40 taper spindle w/ ~4" quill diameter
- 5 hp continuous spindle motor

Plus the same features on all our bed mills:

- Generous Z-axis CNC travel
- Manual, 2-axis CNC, 3-axis CNC
- Real handwheels so you can work manually
- Solid ram moves along the column providing mass for heavy cuts
- 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

DPMRX5

Outstanding work piece capacity with support from a massive saddle

- 5 hp continuous spindle motor
- 40 taper spindle w/ ~4” quill diameter
- 40” X 20” X and Y travels

Plus the same features on all our bed mills:

- Generous Z-axis CNC travel
- Manual, 2-axis CNC, 3-axis CNC
- Real handwheels so you can work manually
- Solid ram moves along the column providing mass for heavy cuts
- 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

DPMRX7

Our largest mill with outstanding travel and capacity

- 7.5 hp continuous spindle motor
- 40 taper spindle w/ ~4” quill diameter
- 60” X 23” X and Y travels

Plus the same features on all our bed mills:

- Generous Z-axis CNC travel
- Manual, 2-axis CNC, 3-axis CNC
- Real handwheels so you can work manually
- Solid ram moves along the column providing mass for heavy cuts
- 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

DPMRX Bed Mill Specifications Summary

For full, updated specifications see trakmt.com/DPMRX

MODEL NAME	DPMRX2	DPMRX3	DPMRX5	DPMRX7
Table Size	49” x 9”	50” x 10”	50” x 12”	76” x 14”
T-Slots (number x width x pitch)	3 x .63” x 2.5”	3 x .63" x 2.48"	3 x .63" x 2.52"	4 x .63” x 2.5”
Travel (X, Y, Z axis)*	31.75 x 16 x 25.5”	31.5 x 17 x 25.81"	40 x 20 x 25.81”	60” x 23” x 24.25”
Quill Diameter	3 3/8”	3 15/16"		4.56”
Maximum Quill Travel	5”			5.5”
Spindle Taper	R8	40 taper spindle		
Spindle Speed Range	40-600, 300-5000 all models			
Spindle Center to Column Face	18.5”	20.5”	20”	24”
Spindle Motor Power vari-speed head)	3 HP	5 HP		7.5 HP
Power requirements – machine / control	200-240V / 3P / 27A	220V / 3P /35A		200-240V / 3P / 42A
Maximum Weight of Workpiece	1320 lbs.		1760 lbs.	2200 lbs.
Height of table from bottom of bed	36.75”	36.75”	40”	38.75”
Max spindle nose to table	25.5”	25.81”		24.25”
Min height	86.63”	87.5"	87.5”	87.875”
Max height	98.75”	100.50”	102”	105”
Width of machine including table	71.25”	73.5”	94.13”	110”
Length with electric box door closed	73.3”	76.65”	82.5”	94.5”
Overall width incl full table traverse	102.5”	102.5”	131.06”	168.5”
Overall length with electrical door open	93.9”	96.63"	103"	119”
Footprint of Machine	23.13” x 40.5”	24” x 43.31”	24” x 48.4”	42.52” x 63”
Weight net / shipping lbs.	3200 / 3500	4100 / 4400	4400 / 4700	7480 / 7700
Rapid traverse X, Y, Z	250 IPM on X, Y and Z with Mechanical Handwheels, 400 IPM on X and Y, 250 IPM on Z with electronic handwheels		400 IPM on X and Y, 250 IPM on Z	400 IPM on X and Y, 250 IPM on Z
Coolant Capacity	10 gallons			15 gallons
Maximum Work Capacities in Mild Steel:				
Drilling max capacity	1” diameter			
Milling max capacity **	3 inch^3/min	5 inch^3/min		7 inch^3 / min
Tapping max capacity	3 /4 - 10”	1-8”		

*For DPMRX2 - the Electronic Handwheel option will reduce the x travel to 30.5”
**Adaptive machining will dramatically increase max capacity

Hardware Options

- Coolant Pump
- Chip Tray/Splash Shield
- Electronic Handwheels/ TRAKing® (standard on DPM RX5 and RX7)
- Glass Scales on table and saddle
- Work Lamp
- Limit Switches
- Power Drawbar
- Remote Stop/Go Switch
- 30-Taper Spindle (DPMRX2 Only)
- Fog Buster® spray coolant system
- Tableguard
- USB Memory
- Vise – 6”

Pendant control hardware

- 2 or 3 axis CNC, 3-axis DRO
- Real handwheels for manual operation
- 15.6” Touchscreen LCD
- Intel® 2.0GHz processor
- 4 GB Ram
- At least 32GB of mSATA SSD
- 5 USB connectors
- 2 Ethernet Ports (1 for user and 1 for motion control system)
- Override of Program Feedrate
- Override of Spindle Speed
- LED status lights built into run panel
- E-stop
- Spindle Control (FWD, REV, OFF)
- Feed STOP and GO
- Fine vs Course EHW resolution control
- Accessory button to control coolant or air in RUN mode
- Power Reset Button
- Headphone jack for video sound (headphone supplied)

Computer Module Hardware

- 3-axis motor control – X, Y and Z
- 10 inputs
- 10 outputs
- Mill Indexer interface

DPM RX2 DPM RX3 DPM RX5 DPM RX7

Specifications may change – please see www.trakmt.com/dpmrx
Also see www.trakmt.com/RMX for photos and complete description

ProtoTRAK RMX Specifications Summary

For full, updated specifications see trakmt.com/PTRMX

Software Features – general operation

- Clear, uncluttered screen display
- Fly out windows for instant access to features and information
- EPA (Enhanced ProtoTRAK Assistance)
- User based Programming Defaults to simplify part programming
- Event Options to modify Defaults or select additional functionality
- QWERTY touchscreen keyboard
- Calculator
- Prompted data inputs
- English language – no codes
- Soft keys - change within context
- Windows® operating system
- Selectable two or three-axis CNC
- Color graphics w/ adjustable view
- Gestures for pan, zoom, rotate
- Inch/mm conversion
- Convenient modes of operation
- Networking

DXF File Converter Option

- Import and convert CAD data into ProtoTRAK programs
- DXF or DWG files
- Chaining
- Automatic Gap Closing
- Layer control
- Part alignment
- Feature analysis (circle/arc radius and position)
- Simple CAD construction/editing tools
- DXF-output capability
- Easy, prompted process you can do right at the machine

Parasolid File Converter Option

- Import and convert 3D CAD data into ProtoTRAK programs
- X_T files
- X, Y & Z dimensions are transferred into program events
- 2D and 3D views of part
- Add or remove geometry
- Chaining
- Part alignment
- Feature analysis (circle/arc radius and position)
- Simple CAD construction/editing tools
- Easy, prompted process you can do right at the machine

Program Mode Features

- Circular interpolation
- Linear interpolation
- Advanced Adaptive Tool Path (O)
- Geometry programming
- Toolpath programming
- Auto Geometry Engine – Built-in CAD to fill in missing print data for you while you program
- Alphanumeric program names
- Automatic Scaling of print data
- Nesting
- Multiple Fixtures (O)
- Incremental and absolute dimensions may even be mixed on a single point
- Automatic diameter cutter comp
- Look –graphics at all times
- List step – graphics with programmed events displayed
- Program data editing
- Part graphics update while programming
- Selectable display between size of drawing and number of events
- List Step graphics relate Events to Drawing
- Editing of programmed data
- Swipe to move through programmed Events
- Auxiliary functions: Coolant, Air/Mist, Pulse Indexer, Programmable Output signal (O)

DRO Mode Features

- Incremental and Absolute dimensions
- Graphical Override of Axis Feed and Spindle RPM
- Jog at rapid with override
- Power feed X, Y or Z
- Teach-in of manual moves
- Programmable Go To dimensions (O)
- Servo return to 0 absolute
- Tool offsets from Tool Library (O)
- Line Center calculation
- Circle Center calculation

Canned Cycles (Event types):

- Position
- Drill / Bore / Tap
- Bolt Hole Drill / Bore / Tap
- Mill
- Arc
- Circular profile
- Rectangular profile
- Irregular Profile (with Auto Geometry Engine)
- Face Mill
- Circle pocket
- Rectangular pocket
- Irregular Pocket (with Auto Geometry Engine)
- Islands including Pocket and Island shapes
- Subroutine Repeat
- Subroutine Mirror
- Subroutine Rotation
- Subroutine Convert Drill to Tap
- Subroutine Engrave (O)
- Copy (O)
- Copy Mirror (O)
- Copy Rotate (O)
- Copy Convert Drill to Tap (O)
- Helix
- Thread Mill (O)
- Program pause

Advanced Features (Optional)

- Adaptive Pocket Roughing
- Verify Make Part – solid model graphic of programmed toolpath
- Finish Tool #
- Rest Machining
- Multiple Fixture Offsets
- Event Comments
- G-code editor
- Thread Mill event
- Engrave Event
- Search Edit
- Events
- Copy
- Copy Mirror
- Copy Rotate
- Copy Convert Drill to Tap
- Tool Library
- Chip Clear
- Clipboard

Offline Programming (Optional)

- ProtoTRAK RMX UI for Windows PC
- Program parts and simulate CNC Run
- Modify files from current and former ProtoTRAK models

Auxiliary Functions (Optional)

- Enables programming and control of:
- Coolant
- Air (for Fog Buster® or other air-driven coolant systems)
- Pulse Indexer
- Programable Output signal

TRAK MTConnect (Optional)

- Machine networking through ProtoTRAK® ethernet connection or USB Wi-Fi adapter
- Collect machine data throughout shop
- Monitor machine status, receive notifications and analyze data throughout your machines' history

Specifications may change – please see www.trakmt.com/ptrmx

ProtoTRAK and the Future

Technology is changing rapidly. We made the ProtoTRAK RMX to be a technology platform for new and productive features we offer now as well as those we add in the future.

Collaborating with the best

The ProtoTRAK RMX gives you an amazing amount of technology that combines state-of-the-art hardware and elegant software. We wrote most of the software ourselves. But we also partner with other companies, including Microsoft , Siemens, and ModuleWorks to bring you the capabilities you need in that easy, logical user interface that machinists love so much.

Software Releases

In a world of rapidly changing opportunities and threats, complex software is a never-ending challenge. Our Engineering team will continue to perfect our software and work to give you enhancements that you will truly value.

Our policy is that new software versions that fix problems and add minor enhancements are free. Software versions that offer important new features will sometimes come at a charge.

See our website at www.trakmt.com/RMX

EPA 2.0

The ProtoTRAK RMX we are shipping today contains the powerful Enhanced ProtoTRAK Assistance (EPA). This feature provides you with basic information and tips for running the control itself. We will continue to refine this resource as we go and the improvements will be contained in future software releases.

The next generation of EPA will be called EPA 2.0. It will go beyond help functionality. It will contain an important set of features aimed at helping you cope with the growing skills shortage in the machining trades.

We can't talk a lot about what those features may be, but please stay tuned...

MTConnect – Now and Future

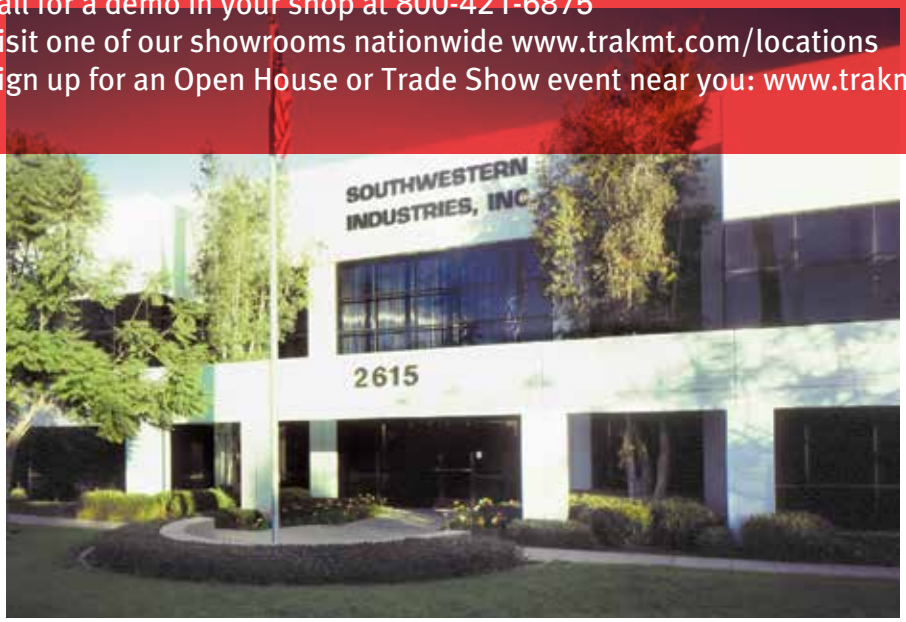
Technology driving the **Industrial Internet of Things** is moving rapidly. The MTConnect standards for connecting machines and software applications have been developed by a committee under the auspices of the AMT – the Association for Manufacturing Technology (McLean, VA).

The ProtoTRAK RMX may be connected via the Ethernet connection, either by cable or wirelessly. It supports the MTConnect Protocols, Components and Data Tags. As such, the ProtoTRAK RMX is compatible with the machine monitoring software made by several different providers.

As is the case with CNC technology, much of what is being developed by others does not really fit the needs of the toolroom. Nevertheless, this is an important new technology and we are determined to find the capabilities that will give real value to the people who use our TRAK RX Bed Mills.

MTConnect protocol at work monitoring early production units in our factory.

Get to know the new TRAK RMX Bed Mills featuring the ProtoTRAK RMX today!
Visit www.trakmt.com/RMX
Call for a demo in your shop at 800-421-6875
Visit one of our showrooms nationwide www.trakmt.com/locations
Sign up for an Open House or Trade Show event near you: www.trakmt.com/events



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