

# An Exciting New Upgrade

## For Your ProtoTRAK CNC



### Modern Hardware Platform

- USB Storage replaces the floppy disc drive
- Crisp color LCD replaces monochrome CRT
- Warranty and Express Exchange Protection far into the future

### Improved Navigation

- Edit right in program mode
- Save Temp to retain tool table after shut down

### Exciting New Features

- Enhanced Auto Geometry Engine
- Enhanced Screen Graphics
- Optional TRAKing®

### Easy Transition

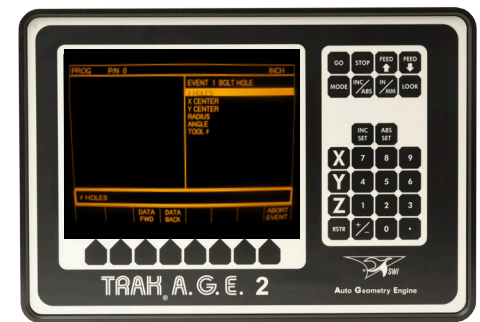
- Same look and feel of your current ProtoTRAK
- Quick start guide will have you running parts in minutes



ProtoTRAK MX2 and MX3  
Manufactured from 1992 to 1996



ProtoTRAK M2 and M3  
Manufactured from 1996 to 2001



TRAK AGE2 and AGE3  
Manufactured from 1996 to 2001

### On these Machines:

- Bridgeport® and Bridgeport® -style retrofits
- TRAK® Bed Mills
- TRAK® Knee Mills
- Sport Machines

**TRAK** MACHINE TOOLS



SOUTHWESTERN INDUSTRIES, INC.

# A New Opportunity

For decades, Southwestern Industries has provided like-new exchanges to resolve product problems. We are determined to continue this support, but early generations of controls were designed and made so long ago that some key components have become impossible to find.

The all-new ProtoTRAK KMX CNC has been specifically designed as an upgrade for your older ProtoTRAK CNC. It has features that give you an instant lift in productivity and it will put you on a hardware platform that we will be able to support long into the future.

## Your Choices

**Continue to Exchange your failed Pendant and Computer Modules for like-units under our Express Exchange Program.**

Pros	Cons
<ul style="list-style-type: none"><li>• Quick – can be in your shop the next day</li><li>• Inexpensive</li><li>• Easy to do</li><li>• No decision/approvals</li></ul>	<ul style="list-style-type: none"><li>• The computer modules and pendant are separate so exchanging one doesn't address a potential problem with the other</li><li>• This option will go away in the not-to-distant future</li><li>• No improvement, just spending money to maintain the same capability</li></ul>

**Buy an LCD Upgrade from someone else**

Pros	Cons
<ul style="list-style-type: none"><li>• Nicer display</li><li>• Inexpensive</li><li>• We won't deny you an Express Exchange in the future even if your unit has a foreign component in it (nice guys, huh?)</li></ul>	<ul style="list-style-type: none"><li>• Risky to deal with a small company with limited resources</li><li>• Supplier may not be able to deal with related issues that arise and you may end up with nothing</li><li>• Leaves you with the original keypad – a wear component that fails with time and use</li><li>• Not doing anything to upgrade the computer module could lead to more money spent in repairs</li><li>• Waiting for installation</li></ul>

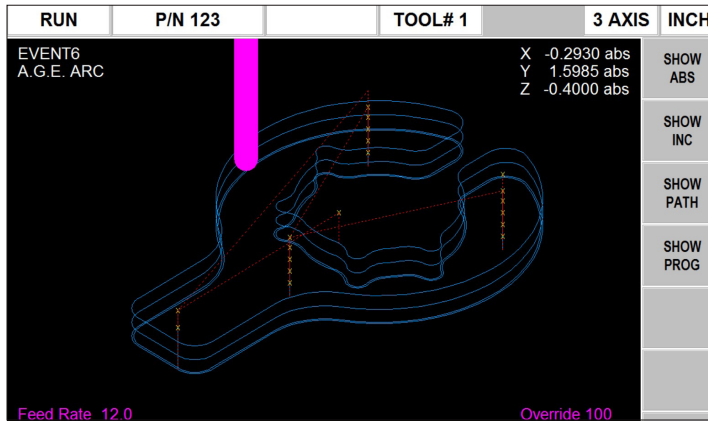
**Upgrade to ProtoTRAK KMX (best choice!)**

Pros	Cons
<ul style="list-style-type: none"><li>• All new hardware</li><li>• Replaces both Pendant and Computer Module</li><li>• USB instead of floppy drives</li><li>• Productive new features</li></ul>	<ul style="list-style-type: none"><li>• More expensive, may not be appropriate for the condition of the machine</li><li>• More difficult decision/needs approval</li><li>• Takes more time to get running (just a little)</li></ul>

# New and Improved

The Features on the new ProtoTRAK KMX reflect decades of experience.

## Crisp Color Graphics



## Easier, more Powerful Auto Geometry Engine

PROG			3 AXIS			INCH		
EVENT 6		A.G.E. ARC	OK	EVENT 7		A.G.E. ARC	Not OK	INSERT EVENT
TANGENT		YES		TANGENT		YES		
DIRECTION		CW		DIRECTION		CCW		DELETE EVENT
X BEGIN		3.3055	abs	X END				
Y BEGIN		3.3541	abs	Y END				
X END		1.0985	abs	X CENTER		0.0000	abs	PAGE FWD
Y END		3.8465	abs	Y CENTER		3.2500	abs	
CONRAD				CONRAD		0.0000		PAGE BACK
RADIUS		1.5000		RADIUS		1.2500		
CHORD ANGLE		97.8375		CHORD ANGLE				
Select 1 for YES 2 for NO.								

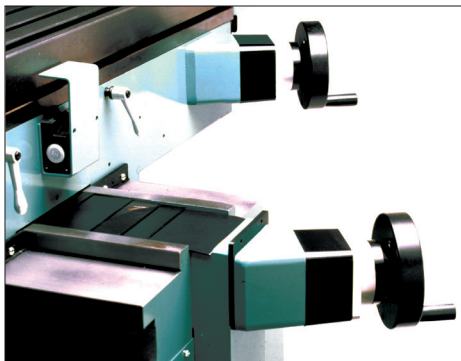
## Advanced File Management

PROG I/O	P/N 1234	3 AXIS	INCH
1.gcd	Run G-code files from your thumbdrive		SAVE
1.PT4			SAVE TEMP
1111.PT4	Save programs, tool tables and reference positions for the current program		COLUMN FWD
123.gcd			COLUMN BACK
2.gcd			SAVE AS MX3
3.cam			RETURN
4.gcd			
88.PT4	Save programs for use in older ProtoTRAK CNCs		
888.PT4			
99.PT4			
Program Name : 123			

## Edit in Program Mode

PROG			P/N 111291			3 AXIS			INCH											
EVENT 2			ARC			EVENT 3			ARC			INSERT EVENT								
X BEGIN			0.0000			inc			X BEGIN			0.0000			inc			DELETE EVENT		
Y BEGIN			0.0000			inc			Y BEGIN			0.0000			inc					
Z RAPID			0.0000			inc			Z RAPID			0.0000			inc			PAGE FWD		
Z BEGIN			0.0000			inc			Z BEGIN			0.0000			inc					
X END			0.0000			abs			X END			-0.1340			abs			PAGE BACK		
Y END			2.7000			abs			Y END			2.6611			abs					
Z END			0.0000			inc			Z END			0.0000			inc					
X CENTER			0.0000			abs			X CENTER			0.0000			abs					
Y CENTER			0.0000			abs			Y CENTER			2.4500			abs					
Z CENTER			-0.3750			abs			Z CENTER			-0.3750			abs					
CONRAD			0.0000						CONRAD			0.0000								
DIRECTION			CCW						DIRECTION			CCW								
TOOL OFFSET			CENTER						TOOL OFFSET			CENTER								
Z FEEDRATE			10.0						Z FEEDRATE			10.0								
Z RAPID : 0.0000															inc					

## Options



TRAKing® is available for most upgrades

### TRAKing®/ Electronic Handwheel Option

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

Once you use TRAKing®, you will never want to crank manual handles again!

### KMX Offline Programming

- All features of the ProtoTRAK KMX organized to run on your PC
- Program and setup your jobs and then load into the ProtoTRAK KMX
- Windows® operating system

### Converter Package for Offline

(requires purchase of KMX Offline Programming)

#### Verify

- Solid model representation of parts and toolpaths

#### DXF File Converter

- Import and convert CAD data
- DXF or DWG files
- Automatic Gap Closing with Chaining
- Layer Control
- Easy, prompted process

#### Parasolid File Converter

- Generate ProtoTRAK KMX programs from the data in the solid file
- 3D CAD format
- No specialized knowledge required

# ProtoTRAK KMX

## Upgrade Specifications

### ProtoTRAK Upgrade Hardware

- Use your current motors, servo amplifiers and ballscrews (there are some exceptions, see the details of your kit)
- Two- or three-axis CNC, 3-axis DRO
- 9.0" Color LCD
- Rugged industrial PC
- 2 USB ports for interface with a storage device, keyboard and mouse
- RJ45 Port and Ethernet card for Networking
- AUX Functions supported (only when present on original control):
  - Coolant on/off
  - Spindle off
  - Signal to programmable indexer

### 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 (3-axis models)
- Color graphics with adjustable views
- Inch/mm selectable
- Convenient modes of operation (see below)

### DRO Mode Features

- Incremental and absolute dimensions
- Jog at rapid with override
- Powerfeed X, Y or Z (3-axis)

- Teach-in of manual moves
- Servo motor return to 0 absolute
- Tool offsets from library
- Go To Dimensions (Optional with TRAKing®)
- Fine/Course handwheel resolution (Optional with TRAKing®)

### Program Mode Features

- Auto Geometry Engine
- Geometry-based programming
- Tool Path programming
- Scaling of print data
- Programmable Auxiliary functions (when present in original controls)
- 3-axis Geometry conversational programming (3-axis models)
- Incremental and absolute dimensions
- Automatic diameter cutter comp
- Circular interpolation
- Linear interpolation
- Look – graphics with a single button push
- Event editing within the program
- Conrad – automatic corner radius
- Math Helps with graphical interface
- Tool step over adjustable for pocket routines
- Selectable ramp or plunge cutter entry
- Subroutine repeat of programmed events
- Nesting
- Subroutine Rotate about Z-axis for skewing data
- Subroutine Mirror of programmed events
- Copy repeat for editing of repeated events

- Copy rotate for editing of rotated events
- Copy mirror for editing of mirrored events
- Run Island, Helix, Thread Mill and Engrave events when present in an imported ProtoTRAK program

### Canned Cycles

- Position
- Drill
- Bolt Hole
- Mill
- Arc
- Circle pocket
- Rectangular pocket
- Irregular pocket
- Face Mill
- Circular profile
- Rectangular profile
- Irregular profile

### Set Up Mode Features

- Service Codes
  - Software
  - Machine Setup
  - Advanced Diagnostics and Service logs
  - Operator Defaults and options
- Set pocket and Face Mill step-over (in service codes)
- Tool names
- Tool library
- Tool length offset with modifiers
- Tool path graphics with adjustable views

Verify – solid model representation of finished part (as programmed)

### Run Mode Features

- TRAKing® (optional)
- 3D CAM file program run
- 3D G-code file run with tool comp
- Real time run graphics with tool icon

### Program In/Out Mode Features

- Program Storage to USB Flash Drives
- CAM program converter
- Converter for prior-generation ProtoTRAK programs
- DXF / DWG file Converter (Offline version only)
- Preview Graphics for unopened files
- Networking
- Save Temp to save current program, tool offsets and home positions for running the next day with minimal setup

**Want to see more?**



Call for our desktop demo. **We come to you!**

**TRAK<sup>®</sup> MACHINE TOOLS**



SOUTHWESTERN INDUSTRIES, INC.

2615 Homestead Place  
Rancho Dominguez, CA 90220

T | 310.608.4422  
[www.trakmachinetools.com](http://www.trakmachinetools.com)

© Copyright 2017, TRAK Machine Tools, F16899 5/9/17