Southwestern Industries, Inc.
ProtoTRAK KMX2 Retrofit Specifications

ProtoTRAK KMX System Specifications

Control Hardware

- Digital Servo Amplifiers – custom designed for ProtoTRAK operation
- D.C. Servo Motors – rated at 280 in-oz. continuous torque are twice that required
- Precision Ball Screws – in the table and saddle
- Modular Design – simplifies service and maximized uptime
- 115V/60HZ/10 amps
- Feedrate Override of programmed feedrate and rapid
- Polycarbonate Sealed Membrane Keypad to lock out contamination
- 9.0" Color LCD
- Rugged Industrial PC
- Glass Scale on quill for Z-axis readout
- Two-axis CNC, 3-axis DRO
- 2 USB ports for interface with a storage device, keyboard and mouse
- RJ45 Port and Ethernet card for Networking

Software Features

- 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 (3-axis models)
- Color graphics with adjustable views
- Inch/mm selectable
- Convenient modes of operation
- Diameter Cutter Compensation – allows programming of the part rather than the center of the tool path
- Circular interpolation – makes arcs and any size hole easy to do with standard tools
- Linear Interpolation – to machine lines at any angle
- Conrad – provides automatic corner radius programming with one data input
- Incremental and Absolute – programming can even be mixed within an event
- Error Messages – to identify programming mistakes
- Fault Messages – for system self-diagnostics
- Parts Graphics display
- Look – a single button press to view graphics during programming
- Math Help – for finding points in a prompted format with graphical representation of prompts
- Machine Tool Error Compensation & Backlash Compensation custom set after installation
- Selectable Inch/mm measurement readout
- Jog of X and Y from 1 to 100 inches per minute

DRO Mode features

- Incremental and absolute dimensions
- Jog at rapid with override
- Powerfeed X, Y
- Teach-in of manual moves
- Servo 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
- Programming of Auxiliary Functions (when present in original control)
- 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
- Programmed pause
- 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 library
- Tool names
- 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 drive
- CAM program converter
- Converter for prior-generation ProtoTRAK programs
- DXF/DWG file converter (Offline version only)
- Selection of file storage locations
- 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

Control Options

KMX Offline programming
- All features of the ProtoTRAK KMX organized to run on your PC
- Program and set up your jobs and then load into the ProtoTRAK KMX
- Windows operating system (will not work with Mac OS)

Converter Package for Offline (requires purchase of KMX Offline Programming)
- **Verify**
  Solid model representation of machining the part including the tool path
- **The Parasolid File Converter**
  Generate ProtoTRAK KMX programs from the data in the solid file
  .x_t 3D CAD format
  No specialized knowledge required

- **The 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

TRAKing/Electronic Handwheels Option (not available on all machines)

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

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