

General Specifications

Each ESPRIT system is built upon a set of core functionality, as summarized in the Product Overview brochure. Beyond this you will add one or more components depending on your particular machining needs. Choose from among several milling, turning, and Wire EDM components. No matter how you put it together, ESPRIT is "The Right Choice!".

ESPRIT for Milling, SolidMill, and Wire EDM, SolidWire, are both covered in detail in separate brochures.

SolidTurn Traditional

A CAM system for 2-axis turning, SolidTurn Traditional is the ideal starting point for your 2-axis turning. From roughing and grooving, to threading and finishing, you have complete support for all machining cycles. This package also includes all the "core" functionality described in the general specifications of the Product Overview brochure. The capabilities of SolidTurn Traditional are included inside all the ESPRIT turning packages listed here.

- CAM for 2-axis turning
- Extensive control over all cutting conditions
- Contour – profile cutting for facing and OD / ID turning
- Hole making cycles – drilling, peck drilling, boring, tapping and up to 13 other point to point machining cycles
- Roughing – for rough turning / facing from regular or irregular shaped stock
- Pocket Rough –for rough turning / facing profiles with undercuts (pockets)
- Copy Rough – for rough turning / facing using an offset profile
- Grooving – seven machining cycles with single plunge, multi-plunge, peck grooving, and zigzag cutting styles
- Threading - single and multi-point threading of straight, tapered, constant and variable lead threads
- Cutoff – synchronized with part handling
- Part handling - bar feed, part catcher, and part pickup
- Tailstock – engage and disengage control
- Library of standard inserts – ANSI and ISO standard inserts for grooving, threading (top notch and lay down), and turning including square, round, trigon, and diamond
- Library of standard holders – ANSI and ISO standard holders with 25 turning and boring styles
- Unlimited custom tools and holders with any geometry
- Libraries for materials, speeds and feeds
- Project Manager to organize your work with Feature tab, Operation tab, and Tool tab
- Universal post processing with an extensive library and custom post generator
- Solid simulation and verification with comprehensive collision detection

SolidTurn Advanced

SolidTurn Advanced includes all the capabilities of SolidTurn Traditional and the "core" ESPRIT functionality with the addition of "C" and "Y"-axis power tooling ability, the inclusion of a set of milling machining cycles, and access to the complete milling cutting tool libraries.

- CAM for C- and Y-axis mill-turn
- Includes SolidTurn Traditional plus:
- C 3-axis and Y 4-axis mill-turn with power tooling
- Rotary 4-axis simultaneous "Wrap" machining cycles – Contour profile cutting, Pocketing, Hole making cycles
- Work on part face or diameter with either ZXC or ZXY 2 1/2-axis machining
- Library of standard milling tools: flat, ball nose, tapered, corner round, chamfered, and dovetail end mills. Face mill, thread mill, drill, center drill, reamer, tap, and boring bar
- Unlimited custom milling tools and holders with any geometry
- Libraries for materials, speeds, and feeds for milling

SolidTurn Production

A full production turning CAM system for supporting any level of complexity in lathes, turning centers and "Swiss" style machines. SolidTurn Production includes all the functionality of SolidTurn Traditional and SolidTurn Advanced plus the "core" functionality of ESPRIT. SolidTurn Production extends your capabilities with the additional support of multi-spindles and multi-turrets to perform synchronized and synchronous machining.

- CAM for multi-spindle / multi-turret turning
- Includes SolidTurn Traditional and SolidTurn Advanced plus:
- Synchronized and Synchronous 4-axis turning
- Balanced Rough – for rough turning / facing from regular or irregular shaped stock
- Advanced tooling for fixed turrets, gangs, and slides
- "Swiss" style machine support including sliding head stock
- Advanced "Machine Set-Up" – define unlimited number of spindles and turrets from 2- to 22- axis, including fixed or moving spindles and turrets, gang, slide or turret based cutting tools
- Sync List – view cutting operations by turret, spindle or head; drag and drop editing of sync and wait codes; time study bar chart for program optimization
- Synchronized Solid Simulation and Verification for multiple spindles and multiple turrets including simulation of tail stock, bar feed, and part exchanges between spindles
- Universal post processing for multiple spindles and multiple turrets



The most powerful
CAM software ever.
And the easiest.



From 2-axis to 22-axis, ESPRIT is packed with power to handle the most complex, multi-function mill-turn machines, while easy enough to quickly program even the simplest turning job. Turning machines and "Swiss" style lathes with the most complex tooling, turret, and spindle configurations are easily programmed to perform turning, C-axis and Y-axis milling with complete synchronization, post processing and machine simulation.

w w w . M T T S . n e t

Production Machining

ESPRIT delivers production quality G-Code programs for turning that are highly optimized to minimize cycle times and tool wear while maximizing part quality. Starting with a complete definition of the cutting tools and comprehensive / flexible machining cycles, tool path is quickly built from any 2D or 3D geometry, Solids or Surfaces model to accommodate any cutting requirements. Built-in simulation and post processing round out a complete tool kit for programming any part on a lathe.

Tooling

C and Y axis Mill-Turn

You can combine turning and milling machining operations in one G-code program with ESPRIT's support of both "C" and "Y" mill-turn. Choose from milling contour – profile cutting, pocketing, or a variety of drilling machining cycles. Perform 2 1/2-axis milling operations on your lathe using its ZXC or ZXY axes. ESPRIT also provides the tools to perform "Wrap" operations. The X-axis movement is converted into a rotary C-axis movement, effectively "wrapping" your shapes (pockets, holes, and contours) around the rotary axis. This makes ESPRIT an excellent tool for slotting and cross drilling.

ESPRIT's tooling system supports it all, from standard boring bars to complex custom form tools. The tooling library uses ANSI/ISO standard coding for regular turning tools, both inserts and holders, to simplify the process of defining your tooling. During the creation of the machining cycle and simulation process the definition of the complete tool (insert, holder, and turret) is used to insure your confidence and a highly accurate result. Your custom tools can be drawn in any CAD system, or in ESPRIT, and imported into the tooling library. While using the ESPRIT SolidTurn Advanced, mill-turn option, the complete library of milling cutting tools is also available.

Machine Tool Technology & Sales
2000 E. Randol Mill Rd, Suite 612
Arlington, TX 76011
USA

Tel: 817 265 0983
Fax: 817 861 9749
sales@MTTS.net
www.MTTS.net



HARDWARE REQUIREMENTS

Operating System:
Microsoft Windows® NT 4 Workstation Sp 5.0 or Greater
Microsoft Windows® 2000
Internet Explorer 4.0 or greater

Minimum:	Recommended:
Pentium microprocessor	Pentium microprocessor
64 MB RAM memory	128+ MB RAM memory
500 MB available storage	1+ GB available storage

Parallel port required for security module

A Full Suite of Machining Cycles

Complete Tool Control

When you want to get the job done quickly, check out ESPRIT's full suite of machining cycles. And when the job demands precise tool control, you have plenty of options. With ESPRIT you have precise control over every individual tool movement, which allows for optimized tool travel, minimized machine time and wear, while also assuring safety. Change any cutting condition at any point during a cut. Cutting speeds are conveniently displayed in both feedrate per minute and chip load with a connection to the built-in database for automatically selecting your cutting speeds.

Drilling

Choose between ESPRIT's machining cycles, your own machine's canned cycles, or use a combination of both. You have the freedom of choice. Drilling, peck drilling, boring, tapping, and up to thirteen other point-to-point canned cycles are available.

Grooving

ESPRIT has seven machining cycles for grooving with a variety of optional tool movements such as single plunge, multiple plunge, peck grooving, and zig-zag grooving (for button tools). You even can finish contour a profile with a groove tool in a Grooving cycle.

Threading

Threading options abound: single and multi-point threading, straight and tapered threads, automatic calculations for depth and number of cuts with manual override, constant and variable lead, straight or tapered on the ID, OD, or Face.

Part Handling Cycles

ESPRIT includes all part handling canned cycles from initial chucking of the stock material through to the part cut-off and pick-up. All these handling cycles are simulated.

Multiple Spindles and Multiple Turrets

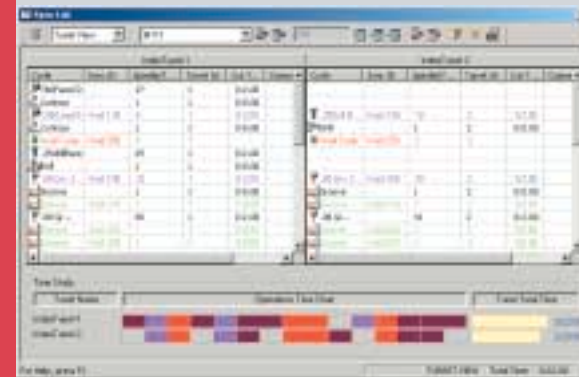
ESPRIT is ideal for programming advanced, multi-function turning machines. The machine set-up allows ESPRIT to understand your machine's configuration. The number and configuration of the machine's spindles, turrets and tool stations; which spindles may be used with each turret; and the coordinates system for each are controlled by ESPRIT's machine set-up. It's easy to create accurate programs within the physical limits of your machine tool, and get precise simulation and G-code post processing. Specify your machine set-up once, during software installation, and take advantage of ESPRIT's ability to calculate accurate time studies. The synchronized programs will minimize cycle time and eliminate potential collisions while also providing the rules for the generation of the G-Code program.

Multiple Fixed and Moving Spindles

Each of your machine's spindles, moving or fixed, along with its physical characteristics are defined inside the machine set-up thereby insuring accurate representation during simulation.

Multiple Turrets, Gang and Slide Tooling

ESPRIT makes it easy to create accurate programs to match the physical limits of your machine tool. That's because the number and configuration of each spindle and turret, the tool stations, which spindles may be used with each turret, and the coordinates system for each are controlled by the machine set-up.



Sync List

Perform time studies on your programs with the ESPRIT Sync List. You'll view a bar chart depicting the cycle times for each operation, organized by turret and spindle. By reviewing the total cycle time and using Synchronization and Wait "code" you can easily optimize the G-code program to minimize the total cycle time. The Sync list is also connected to the simulation and post processing. View each canned cycle and all the tooling by turret, spindle, or head. Use the Windows "drag and drop" technique to edit anything: canned cycle, cutting tools, and synchronization codes.

Complete Machine Modeling

Solid Simulation and Verification

The Solid Simulation and Verification tool allows you to quickly and easily dry run your programs on the computer to verify accuracy, all before ever cutting a chip. Each spindle, each turret, and all your tooling is clearly represented in dynamic 3D solid images. Meanwhile, all the machine's movements, including sliding head stock, are accurately represented to assure complete confidence and quality in your G-code program.

Turning OD, ID, Face

ESPRIT offers Contour profile cutting for facing and OD or ID turning. A universal canned cycle applicable to a wide variety of machining tasks using any single point tool is also included.

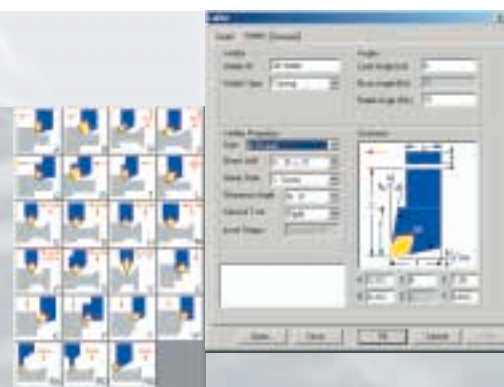
Roughing and Pocketing

Capable of working from a casting, pre-roughed irregular shaped stock, or bar stock, ESPRIT's Roughing canned cycle has numerous options to control every aspect of machine movement: from clearances to differing Z and X stock allowance. Collision detection assures the tool movements are within the limits of the machine and cutting tool.

Universal Post Processing

ESPRIT is capable of formatting G-code for virtually any control thanks to its integrated Universal Post Processing system. The extensive post processor library contains posts for a large number of the more popular machine tools. The entire library is available to you on the product CD. Using the post processor generator

you can easily create a new post processor from scratch or just as easily modify one of the existing posts from the library to suit your needs. In either case you have complete control over the format of your G-code, and the ability to create an unlimited number of post processors to meet whatever demands are placed on you



"Swiss" Style Lathes

The multi-axis mill-turn capabilities of ESPRIT fully support the unique and specialized demands of even the most advanced "Swiss" style turning machines. All ESPRIT machining cycles and post processing capabilities may be used; this support also includes realistic solid simulation of the sliding head stock and gang tooling common to these machines.

