

Shape Generation

Basic Description

Shape Generation is a cutting utility specifically designed to simplify the setup, programming and touch-up of two-dimensional shapes. The typical method for programming a robot to cut shapes accurately requires teaching dozens of individual points and is often a time-consuming, trial-and-error process. FANUC Robotics' Shape Generation requires only one taught point and a specified shape size, significantly reducing programming time.

Shape Generation, the Solution for:

- Laser cutting
- High-definition plasma cutting

Features and Benefits

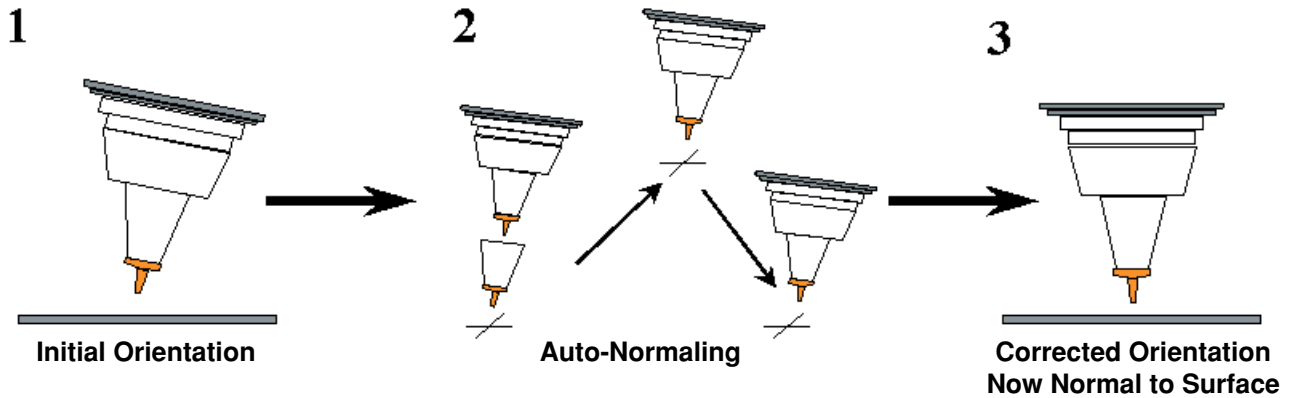
- Single point teaching with a process specific interface for shape cutting. Reduces programming time compared to general purpose methods of teaching many points along the outline of each shape.
- Menu-based TPE software is easy-to-learn and use.
- Includes the AccuPath motion option for added precision.
- Predefined shapes for Circles, Half-Circles, Keyholes, Slots, Hexagons, and Rectangles with easy-to-set size and corner radii.
- User-defined "Custom Shape" - a predefined shape can be defined and manipulated as simple as a defined schedule.
- Stores up to 280 unique shape schedules and allows use of each shape as often as needed.
- Simplified setup allows users to define common process parameters to reduce programming time.



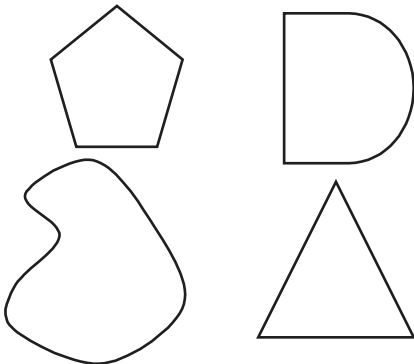
- Process specific macros, such as Process-On, Process-Off, Calc-Slot, and Cut-Slot, simplify the laser process and reduce programming time.
- Shape Shifting Function provides easy and precise repositioning and/or orientation of the shapes in the X,Y and Z direction along a specific frame.
- Rotation register provides a simple method to rotate (+/-360°) a shape about the Z axis of a specified frame and reduces tuning time when qualifying a part.
- Tool kerf width compensation assures accurate shape sizes by correcting for the process cut width.
- User-defined pierce locations, blend-in angles and overlap angles provide the flexibility to achieve shorter cycle times and higher cut quality.
- Auto Normal Function (for laser cutting only). Automatically orients the cutting tool perpendicular to the work surface, reducing teach time.
- Optional Small Circle Accuracy. Available on all ARC Mate series robots, provides high path accuracy without the use of an additional two-axis hole cutter, improving cut quality and speed with a reduced mass and lower initial capital costs.
- Start Axis Optimization. Improves the shape by defining the start axis to begin with either (+X, -X, +Y or -Y) depending on the motion of the robot or the specified frame.
- Work Angle Specification. User-specified work angle +/- 45° in either X or Y from normal, offers the ability to alter a shape for angle or bevel cutting without reprogramming.
- Bump Box. Simple method to adjust the location of defined shapes or points without interrupting production; application-programming knowledge is not required.

Auto Normal (Teaching Aid)

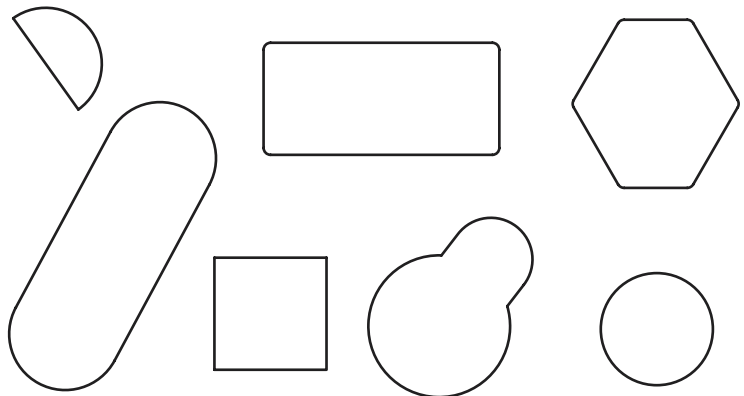
- Re-oriens nozzle to be perpendicular
- Ensures optimum process speeds and quality
- Decreases programming time
- Single key-stroke operation



Example: Custom Shapes



Standard Shapes



Shape Generation Specifications

Items	Schedules
Circles / Half Circles	100
Hexagons	50
Slots	50
Keyholes	20
Rectangles	50
Custom Shapes	10
Total	280



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