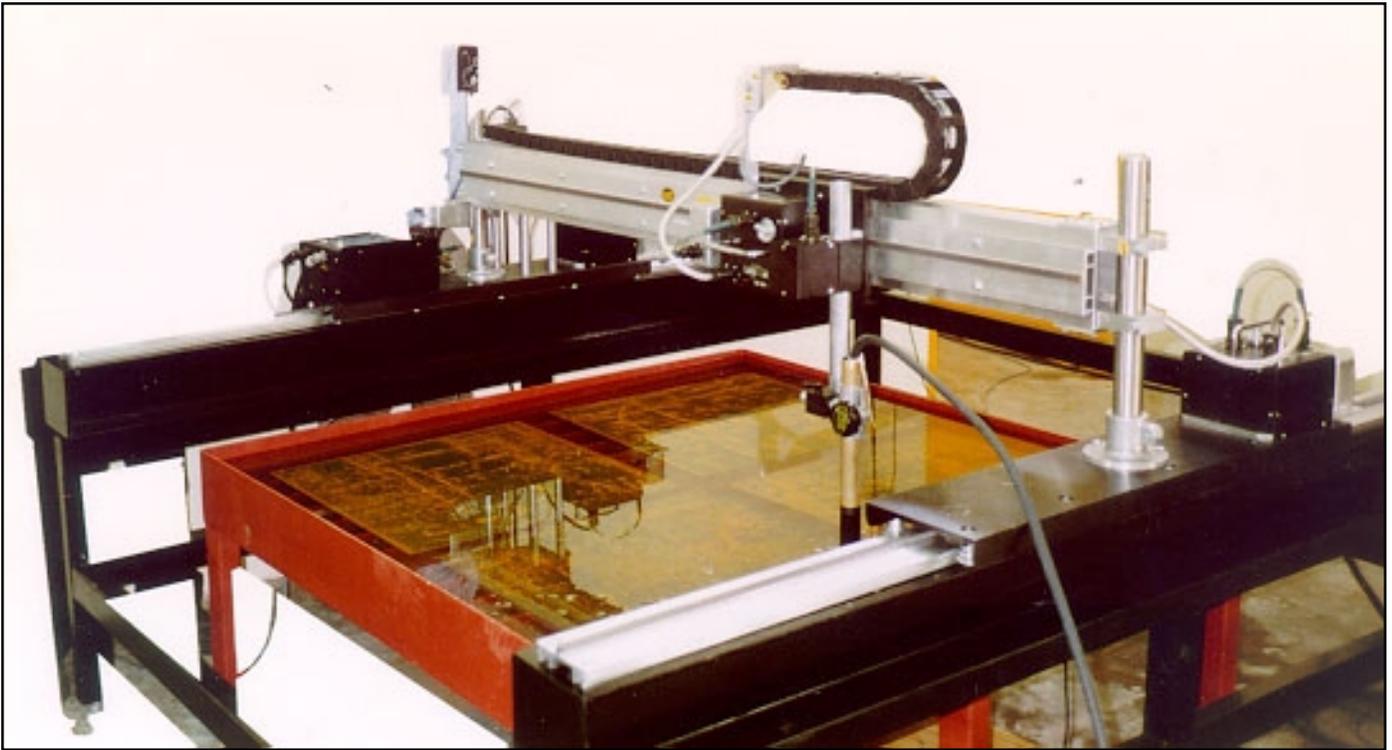# CNC Cutting Machine Burns Virtually Any Shape Or Pattern.

## Download NC or CAD drawings into the Programmable Gantry System.



The **Programmable Gantry System** provides coordinated motion in two axis, using three drives: two synchronized motors drive the main carriages along the X-axis, and one drives the Y-axis crossbeam carriage. The machine can be easily programmed to repeat any contour or pattern for either cutting or welding applications.  A handheld terminal supplied with the machine is used to program the required shape and operation sequence. Other functions besides moves can be programmed, such as starts, stops, delays, repeats and rapid traverse. Ten programs can be stored in machine memory at any one time.

A PC option is available which includes a connecting cable and a software program. With this, the operator can create any number of shapes on a PC and store them on disk. Selected shapes can then be downloaded into the machine as needed.

The **Programmable Gantry System** is shipped in major subassemblies that are easy to assemble and install on your burning table.

*PATENTS WORLDWIDE*

# Programmable Gantry System

The CNC Gantry System is a two-axis gantry that has dual side synchronized drives running on parallel tracks, and a second axis drive carrying a cutting torch that runs on a crossbeam. It can be used for flame or plasma cutting, or for welding, of a variety of shapes which are programmed and stored in memory.

The machine memory stores ten different programmed shapes, numbered 0 to 9. At any time, one of these shapes is current, and will stay current even when the power is shut off and turned back on, until the shape number is changed by the operator.

All programming is done with the handheld terminal provided, or by downloading from a PC using the PC option. The terminal plugs into a connector on the control box, and can be removed at any time. It is not needed to run the machine.

Shapes or patterns are constructed using segments. To do this, select the type of segment required and its quadrant from the programming chart, and enter it on the terminal keypad. Any one shape can have up to 50 segments. Other functions such as weld/oxygen, on/off, time delay, or repeat another shape a number of times, also count as one segment each if used.
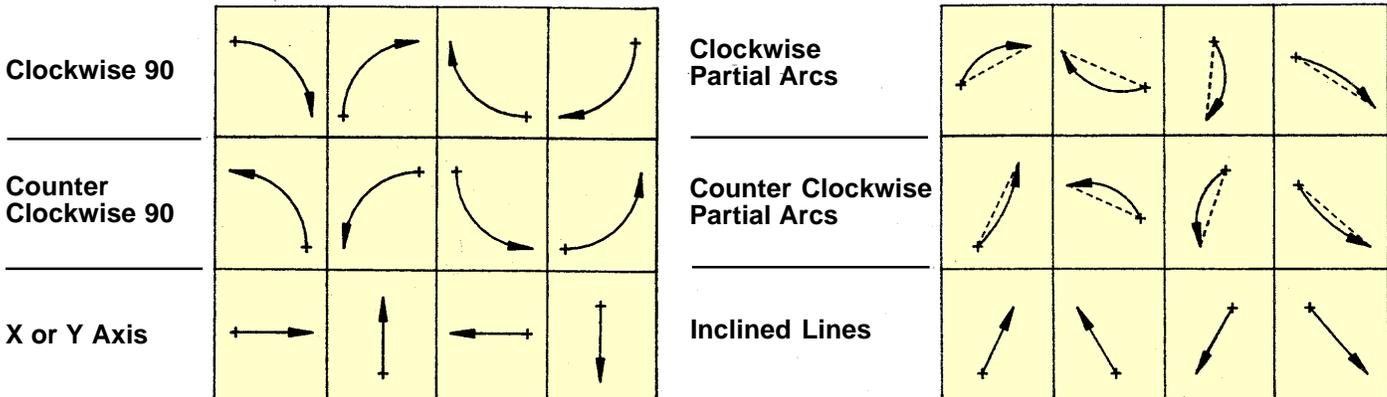
## Handheld Terminal Functions:

## The programming operation is selected by pressing keys A, B, C, D, or E.

**A.** ALL SEGMENTS; press **"A"** on the terminal to program a new shape; enter the total number of segments and data for each segment.

**B.** REVISE SEGMENT; press **"B"** on the terminal to re-program a single segment. This is useful if there is an error in data for just one segment, so that the whole shape does not have to be re-entered.

**C.** CHANGE SHAPE NUMBER; press **"C"** on the terminal to change the current shape number. The program switches to the new number in memory, and to whatever shape is stored there.

**D.** DISPLAY SHAPE DATE; press **"D"** to display the data for the current shape. The terminal display shows the total number of segments, and data for each segment one by one each time you press enter.

**E.** END OF SEGMENT SLOWDOWN; press **"E"** to set the value of deceleration for the shape, when the machine approaches the end of each segment. This is useful when the shape has sharp corners, to prevent overshoot. **99** is maximum slowdown, **0** is no slowdown.
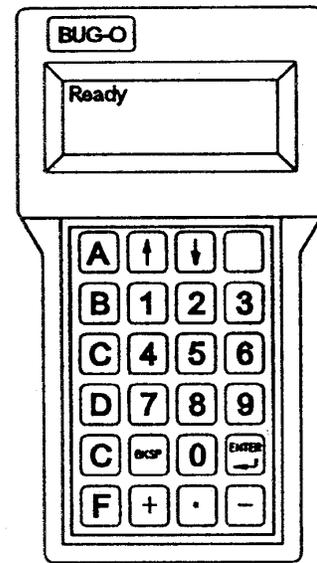
## The different types of segments that can be loaded into the machine are as follows:

| | |
|---|---|
| **Clockwise 90** |  |
| **Counter Clockwise 90** | |
| **X or Y Axis** | |

| | |
|---|---|
| **Clockwise Partial Arcs** |  |
| **Counter Clockwise Partial Arcs** | |
| **Inclined Lines** | |

Other functions besides the moves shown above are: Weld Contact/Solenoid On/Off, Pause, Delay, Repeat another shape, Full ellipse and Rapid Traverse.
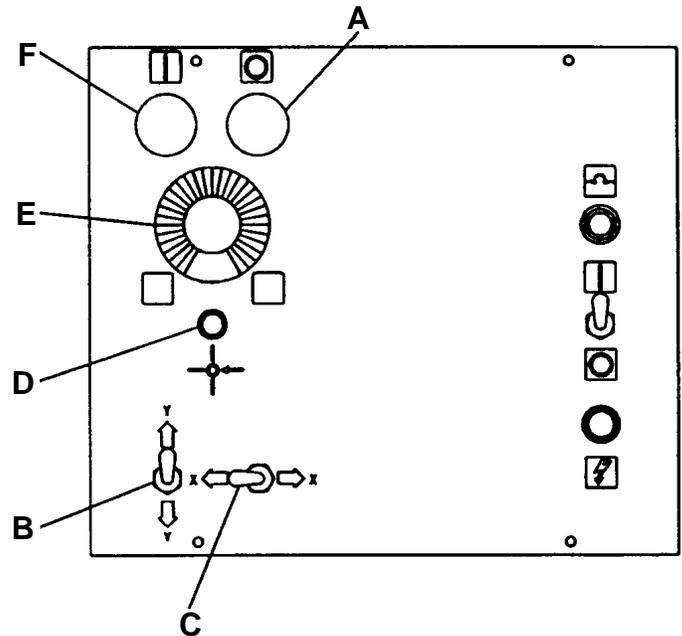
# Programmable  Gantry System

## Operation:

When the machine is plugged in and the power turned on, this is the reference, start or home position.

There are three options (the handheld terminal is not needed for the first two):

1. **MOVE:** To change the start position, push the **STOP/PAUSE** button **(A)**, move the machine manually to the required position using toggle switches **(B)** and **(C)**, and push the reset button **(D)**.

2. **RUN:** Set the speed knob **(E)** and push the **START/RUN** button **(F)** to cut/weld a shape.

3. **PROGRAM:** The programming operation requires the use of the handheld terminal or downloading from a PC.

## Technical Data:

**Programmable Ganty System**

| | |
|---|---|
| **Power Requirements:** | PGS-1000-_*120 VAC/50-60 Hz/1 |
| | PGS-1002-_*240 VAC/50-60 Hz/1 |
| **Travel Speed:** | 4-80 in/min (100-2000 mm/min) |
| **Maximum Segment Dimension:** | 72" (1800 mm) Within Limits of Travel |
| **Minimum Dimension Increment:** | Inches: 0.01" Metric:  0.1 mm |
| **Delay Increment:** | 0.01 seconds |
| **Maximum Delay:** | 99.99 seconds |

* Available in 3 Standard Sizes: 8, 10 and 12 ft.

## BESTNEST Computer Software Program

The Programmable Gantry System is a computer software program which provides the following advantages:

First, programs for the Gantry System can be created on a PC and stored on disk. Up to ten of these programs can be loaded into the machine at any time using the connecting cable provided with the package.

Second, several types of canned shapes can be loaded into the machine such as circles, rectangles, squares, rounded rectangles, obrounds, ellipses, right triangles and ring shapes. In addition, your own CAD drawings can be downloaded into the the machine by creating a DXF file.

Third, shapes being created on disk can be previewed on the monitor, allowing the shape to be verified. This eliminates the need to have the machine go through a dry run before performing the operation.

This software package comes with a complete set of step-by-step instructions – making it both easy to learn and use.

# Programmable Gantry System

**Features:**

ENCODER

ENCODER

WEST DRIVE

EAST DRIVE

CARRIAGE
36" (914 mm)

CARRIAGE
36" (914 mm)

HANDHELD
PENDANT

HEAVY DUTY
ALUMINUM
RIGID RAIL

XXY
CONTROLS

CABLE
CARRIER
SUPPORT

CABLE
CARRIER

ENCODER

FACE RAIL

CARRIAGE
12" (305 mm)

COLUMN
18" (457 mm)

CROSS DRIVE

HEAVY DUTY
RACKING
GROUP

℄ TO ℄