MM-1 Programmable Pipe Cutter - Programming

Programming Arbitrary Shapes

For custom shapes, select the "shape" software. Programming is simple, but will require a few more steps due to all the variations possible. First, the developed pattern should be laid out as if the pipe is unrolled flat. The cut is then split into a sequence of straight lines or circular arcs that make up the desired pattern. Next, these should be listed in a table on paper, with the type, quadrant and required dimensions. To program the shape, press "A", then enter the total segments at the prompt. Next, enter the data for each segment type, quadrant and dimensions in turn, at the prompt. When all segments are entered the program is ready to run.

Computer Software

The MM-1 Programmable Pipe Cutter can be programmed from a PC, using either of two software packages described below. Shapes can be created off-line, and downloaded to the machine when required. A cable is supplied to connect to the serial or USB port of the PC.

1. PC Option / BUG-6140
   This runs under Windows, and allows you to:
   • Create shapes on the PC.
   • Save any number of shapes to disk, and retrieve them as required.
   • Download programmed shapes from the PC to the machine.

2. BUG-6240 CAD Interface
   This is a complete package that includes both a PC and software. This will allow you to take two dimensional CAD drawings and convert them to a pipe file that you can directly load into your shape machine.
   • DeskCNC is used to modify two dimensional CAD drawings (.Dxf files) and create a toolpath.
   • The toolpath is saved as a CNC file using DeskCNC.
   • The CNC file can be loaded in the PC option for easy integration with the MM-1 System.

MM-1 Programmable Pipe Cutter - Accessories

CWO-7550 Powermax 85

Includes the following:
   • Interface cable to the MM-1 Pipe Cutter
   • 50' (15.24 m) Machine barrel torch

Power Requirements:
Auto-voltage runs on 200-600 Volts, 1 or 3-phase, without the need of rewiring.

Adjustable Output Current: 25-85 Amps

Cutting Capacity: (Recommended) 3/4" (19 mm)

Oxy-Acetylene Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Tip Size</th>
<th>Plate Thickness</th>
<th>Oxygen PSIG</th>
<th>Fuel Gas PSIG</th>
<th>Orifice Drill Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUG-1270-000</td>
<td>000</td>
<td>Light Gauge to 3/16</td>
<td>15-20</td>
<td>5-15</td>
<td>#68</td>
</tr>
<tr>
<td>BUG-1270-000</td>
<td>000</td>
<td>3/16-3/8</td>
<td>20-25</td>
<td>5-15</td>
<td>#64</td>
</tr>
<tr>
<td>BUG-1270-000</td>
<td>000</td>
<td>3/8-5/8</td>
<td>35-40</td>
<td>5-15</td>
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<td>5-15</td>
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<tr>
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<td>1-2</td>
<td>40-45</td>
<td>5-15</td>
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<tr>
<td>BUG-1270-03</td>
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<td>2-3</td>
<td>45-50</td>
<td>5-15</td>
<td>#48</td>
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<td>BUG-1270-04</td>
<td>4</td>
<td>3-6</td>
<td>50-75</td>
<td>10-15</td>
<td>#42</td>
</tr>
</tbody>
</table>

* For tips to cut 6" to 15", please consult factory.

3-Hose Machine Torch 10"
This is a unique "cutting torch" new for Acetylene, Propane-Natural Gas. Only the tip changes.

Chrome Plated Torch Package

Includes the following:
• Interface cable to the MM-1 Pipe Cutter
• 50' (15.24 m) Machine barrel torch

Power Requirements:
Auto-voltage runs on 200-600 Volts, 1 or 3-phase, without the need of rewiring.

Adjustable Output Current: 25-85 Amps

Cutting Capacity: (Recommended) 3/4" (19 mm)

Oxy-Propane, Natural Gas Cutting Tips

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<td>BUG-4070-000</td>
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<td>15-30</td>
<td>5-15</td>
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<td>000</td>
<td>3/16-3/8</td>
<td>20-30</td>
<td>5-15</td>
<td>#64</td>
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<td>70-90</td>
<td>5-15</td>
<td>#30</td>
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</table>

MM-1 Programmable Pipe Cutter - Accessories
Types of Cuts:

A. Pipe Program
1. Saddle Cuts
2. Offset from Center-Line (Hillside)
3. Lateral Cuts
4. Miter Cuts
5. Hole Cuts

B. Shape Program
1. Custom Irregular Shapes

Programming Custom Shapes:

- Linear Drive
- Torch Holder
- Cable Carrier
- 3-Jaw Chuck
- Pipe Rollers
- Adjustable Table
- Part Number Description:
  - *SEO-3500 MM-1 120 VAC/50-60Hz/1Ph
  - *SEO-3500 MM-1 240 VAC/50-60Hz/1Ph
  - (See detail below.)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Pipe Bed</th>
<th>Pipe Cut Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>*SEO-3500</td>
<td>120VAC</td>
<td>8’ (2.44 m)</td>
<td>7’ (2.13 m)</td>
</tr>
<tr>
<td>*SEO-3500-1</td>
<td>120VAC</td>
<td>14’ (4.27 m)</td>
<td>13’ (3.96 m)</td>
</tr>
<tr>
<td>*SEO-3500-2</td>
<td>120VAC</td>
<td>22’ (6.71 m)</td>
<td>21’ (6.40 m)</td>
</tr>
<tr>
<td>*SEO-3500-3</td>
<td>120VAC</td>
<td>30’ (9.14 m)</td>
<td>29’ (8.84 m)</td>
</tr>
<tr>
<td>*SEO-3500-4</td>
<td>240VAC</td>
<td>38’ (11.58 m)</td>
<td>37’ (11.28 m)</td>
</tr>
</tbody>
</table>

- Oxy-fuel versions are available.
- Machine cutting capacity can be increased to 24” (61 cm) diameter at factory.
- When inquiring about 24” (61 cm) diameter models, the machine part number will be followed by -24.

- Cutting Diameter: 4”-16” O.D. (10-40 cm) or 4”-24” O.D. (10-61 cm)
- Load Capacity: 2200 lb. (988 kg)
- Dimensions: 137” L x 38” W x 55” H
  - (348cm L x 91cm W x 140cm H)
- Input Power: 120 VAC/50-60 Hz/1Ph
- 240 VAC/50-60 Hz/1Ph
- Net Weight: 1000 lbs (454 kg)
- Shipping Weight (for *SEO-3500 or *SEO-3502 Only): 1450 lbs. (658 kg)

Technical Data:

- MM-1 Programmable Pipe Cutter - Technical Data
  - PART NUMBER | DESCRIPTION
  - *SEO-3500 | 120 VAC/50-60Hz/1Ph
  - *SEO-3502 | 240 VAC/50-60Hz/1Ph
  - (See detail below.)

- Cable Center
- Linear Drive with Torch Holder
- Rail Assembly ARR-1080
- Pipe Rollers SEO-3500
- Adjustable Table SEO-3500

- Technical Data:
  - MM-1 Programmable Pipe Cutter - Technical Data
  - Main Control Panel
  - Remote Pendant Connection
  - Pendant Control Connection
  - Start/Resume
  - Speed Control
  - Stop/Pause
  - Remote Pendant
  - Emergency Stop

- Mirror Image Switch
- Power Cord
- Power Cord
- Pendant Control Connection
- Micro Switch Connection
- Pendant Control Connection
- Contact Output
- Pendant Control Connection
- Power Cord
- Remote Pendant
- Emergency Stop

Programming With The Handheld Terminal:

To cut a nozzle or hole, the sequence of actions would be to take the handheld terminal connected to the Control Panel and:

1. Press the reset button on the machine. The handheld terminal will display "READY".
2. Press "A" on the terminal. The terminal will ask you what type of cut you want. (See Types 1-5, Page 4).
3. Press the cut type number desired and then press "ENTER".
4. The terminal will ask for the diameter of the small pipe. Press the appropriate dimensions and press "ENTER".
5. Enter the offset dimension if cutting a hillside nozzle.
6. Enter the "ANGLE" in degrees if cutting a lateral.
7. Press "START" on the machine to begin to cut.

Dimensions:

- The MM-1 is a computer-controlled machine that automates the cutting of profiles, holes, nozzles and shapes on pipe with diameters from 4” to 16” (10-40 cm). A 4” to 24” (10-61 cm) model is available. It rotates the pipe on its roller bed with a three jaw chuck, while simultaneously moving a cutting torch back and forth along the pipe's axis. Pre-programmed shapes such as saddle, hillside, lateral and miter cuts can be made by simply selecting the type of cut from the menu, then entering the diameters of the pipe and pressing the run button to cut your pipe. There is no need for templates, time consuming layout or calculations to do. In addition, irregular or uncommon shapes can be plotted, programmed and saved for future use.

- The machine's pipe bed is designed for handling lengths of pipe up to 8’ (2.44 m) long. Additional pipe bed extensions of 8’ (2.44 m) can be added to make up to a 38’ (11.6 m) bed. This method of cutting can be oxy-fuel or plasma. Oxy-fuel is used, the machine will be equipped with solenoids and a three-hose cutting torch. When plasma is used, a rotary ground is installed on the machine. The machine can be delivered with plasma torch leads and power source or the customer may provide their own plasma equipment.

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**Cutting Diameter:**
- 4"-16" O.D. (10-40 cm) or 4"-24" (10-61 cm) model is available.

**Load Capacity:**
- 220 lb. (98 kg)

**Dimensions:**
- 137" L x 36" W x 55" H
  - (348 cm L x 91 cm W x 140 cm H)

**Input Power:**
- 120 VAC/60 Hz/1Ph
- 240 VAC/60 Hz/1Ph

**Net Weight:**
- 1000 lb. (454 kg)

**Shipping Weight** (for SEO-3500 or SEO-3502 Only):
- 1450 lbs. (658 kg)

---

**Types of Cuts:**
- A. Pipe Program
  - 1. Saddle Cuts
  - 2. Offset from Center-Line (Hillside)
  - 3. Lateral Cuts
  - 4. Miter Cuts
  - 5. Hole Cuts
- B. Shape Program
  - 1. Custom Irregular Shapes

---

**Technical Data:**

**Programming Custom Shapes:**

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B. **Shape Program**
   1. Custom Irregular Shapes

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**Cutting Diameter:**

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**MM-1 Programmable Pipe Cutter - Dimensions**

The MM-1 is a computer-controlled machine that automates the cutting of profiles, holes, nozzles and shapes on pipe with diameters from 4” to 16” (10-40 cm). A 4” to 24” (10-61 cm) model is available. It rotates the pipe on its roller bed with a three jaw chuck, while simultaneously moving a cutting torch back and forth along the pipe. Saddle, hillside, lateral and miter cuts can be made by simply selecting the type of cut from the menu, then entering the diameters of the pipe and pressing the run button to cut your pipe. There is no need for templates, time consuming layout or calculations to do. In addition, irregular or uncommon shapes can be plotted, programmed and saved for future use.

The machine’s pipe bed is designed for handling lengths of pipe up to 8’ (2.44 m) long. Additional pipe bed extensions of 8’ (2.44 m) can be added to make up to a 38’ (11.6 m) bed. This method of cutting can be oxy-fuel or plasma. Oxy-fuel is used, the machine will be equipped with solenoids and a three-hose cutting torch. When plasma is used, a rotary ground is installed on the machine. The machine can be delivered with plasma torch leads and power source or the customer may provide their own plasma equipment.

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**Programming With The Handheld Terminal**

To cut a nozzle or hole, the sequence of actions would be to take the handheld terminal connected to the Control Panel and:

1. Press the reset button on the machine. The handheld terminal will display “READY.”
2. Press “A” on the terminal. The terminal will ask you what type of cut you want. (See Types 1-5, Page 4).
3. Press the cut type number desired and then press “ENTER.”
4. The terminal will ask for the diameter of the small pipe. Press the appropriate dimensions and press “ENTER.”
5. Enter the offset dimension if cutting a hillside.
6. Enter the “ANGLE” in degrees if cutting a lateral.
7. Press “START” on the machine to begin to cut.

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**MM-1 Programmable Pipe Cutter - Programming**

**Main Control Panel**

**Remote Pendant Connection**

**Pendant Control Connection**

**Start / Resume**

**Speed Control**

**Stop/Pause**

**Reset**

**Manual Jog**

**Mirror Image Switch**

**Power Cord**

**Contact Output**

**Power Switch**

**CBO-4160**

**MM-1 Remote Pendant**

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**Part No. Description Pipe Bed Pipe Cut Length**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Pipe Bed</th>
<th>Pipe Cut Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEO-3500</td>
<td>120 VAC</td>
<td>8’ (2.44 m)</td>
<td>7’ (2.13 m)</td>
</tr>
<tr>
<td>SEO-3502</td>
<td>240 VAC</td>
<td>14’ (4.27 m)</td>
<td>13’ (3.96 m)</td>
</tr>
<tr>
<td>SEO-3503</td>
<td>32’ (9.75 m)</td>
<td>30’ (9.14 m)</td>
<td>29’ (8.84 m)</td>
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<td>SEO-3504</td>
<td>40’ (12.2 m)</td>
<td>38’ (11.6 m)</td>
<td>37’ (11.28 m)</td>
</tr>
</tbody>
</table>

*Oxy-fuel versions are available.

*Machine cutting capacity can be increased to 24” (61 cm) diameter at factory.

When inquiring about 24” (61 cm) diameter models, the machine part number will be followed by -24.

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**Technical Data:**

**Cutting Diameter:**

4”-16” O.D. (10-40 cm)

or 4”-24” O.D. (10-61 cm)

**Load Capacity:**

220 lb. (98.8 kg)

**Dimensions:**

137” L x 36” W x 55” H

(348cm L x 91cm W x 140cm H)

**Input Power:**

120 VAC/50-60 Hz/1Ph

240 VAC/50-60 Hz/1Ph

**Net Weight:**

1000 lbs (454 kg)

**Shipping Weight** (for SEO-3500 or SEO-3502 Only):

1450 lbs. (658 kg)
MM-1 Programmable Pipe Cutter - Programming

Computer Software

The MM-1 Programmable Pipe Cutter can be programmed from a PC, using either of two software packages, described below. Shapes can be created off-line, and downloaded to the machine when required. A cable is supplied to connect to the serial or USB port of the PC.

1. PC Option / BUG-6140.
   This runs under Windows, and allows you to:
   • Create shapes on the PC.
   • Save any number of shapes to disk, and retrieve them as required.
   • Enter data via a text editor on screen — which helps program verification.
   • Download programmed shapes from the PC to the machine.

2. BUG-5240 CAD Interface.
   This is a complete package that includes both the above and DeskCNC. This will allow you to take two dimensional CAD drawings and convert them to Digital Files that you can directly load into your shape machine.
   • DeskCNC is used to modify two dimensional CAD drawings (.DXF files) and create a toolpath.
   • The toolpath is saved as a CNC file using DeskCNC.
   • The CNC file can be loaded in the PC option for easy integration with the MM-1.

Programming Arbitrary Shapes

For custom shapes, select the "shape" software. Programming is simple, but will require a few more steps due to all the variations possible.

First, the developed pattern should be laid out as if the pipe is unrolled flat. The cut is then split into a sequence of straight lines or circular arcs that make up the desired pattern.

Next, these should be listed in a table on paper, with the type, quadrant and required dimensions (referring to the chart in the Instruction Manual).

To program the shape, press "A", then enter the total segments at the prompt. Next, enter the data for each segment type, quadrant and dimensions in turn, at the prompt. When all segments are entered the program is ready to run.

MM-1 Programmable Pipe Cutter - Accessories

CWO-7590 Powermax 85 includes the following:
• Interface cable to the MM-1 Pipe Cutter
• 50’ (15.24 m) Machine barrel Torch

Power Requirements:
Auto voltage runs on 200-600 Volts, 1 or 3-phase, without the need of rewiring.

Adjustable Output Current: 25-85 Amps

Cutting Capacity: (Recommended) 3/4” (19 mm)

BUG-1274 10’ Oxy-Machine Torch. 10’ Cutting torch or the same for Acetylene-Propane-Natural Gas. Only the tip changes.

LATERAL NOZZLE CUTS

Oxy-Acetylene Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Tip Size</th>
<th>Plate Thickness</th>
<th>Oxygen PSIG</th>
<th>Fuel Gas PSIG</th>
<th>Orifice Drill Size</th>
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</thead>
<tbody>
<tr>
<td>BUG-1270</td>
<td>000</td>
<td>Light Gauge to 3/16</td>
<td>15-20</td>
<td>5-15</td>
<td>#68</td>
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<td>BUG-1270</td>
<td>002</td>
<td>3/16-3/8</td>
<td>20-25</td>
<td>5-15</td>
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<td>45-50</td>
<td>5-15</td>
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<td>3-6</td>
<td>50-75</td>
<td>10-15</td>
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<td>65-80</td>
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<td>BUG-1270</td>
<td>606</td>
<td>8-12</td>
<td>70-90</td>
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For tips to cut 6” to 15”, please consult factory.

Oxy-Propane, Natural Gas Cutting Tips

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Dry-Arc Stainless Steel Tips

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<td>001</td>
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<td>002</td>
<td>1/2” (13 mm)</td>
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</tr>
<tr>
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<td>004</td>
<td>3/16” (5 mm)</td>
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<tr>
<td>BUG-9250</td>
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<td>1/8” (3 mm)</td>
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**Cutting Capacity**

- (Recommended) 3/4” (19 mm)