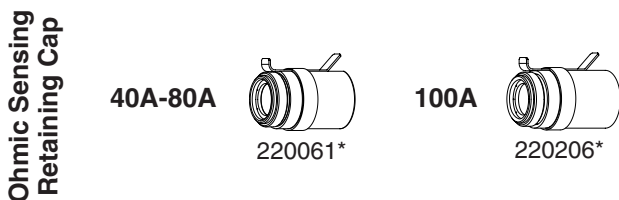
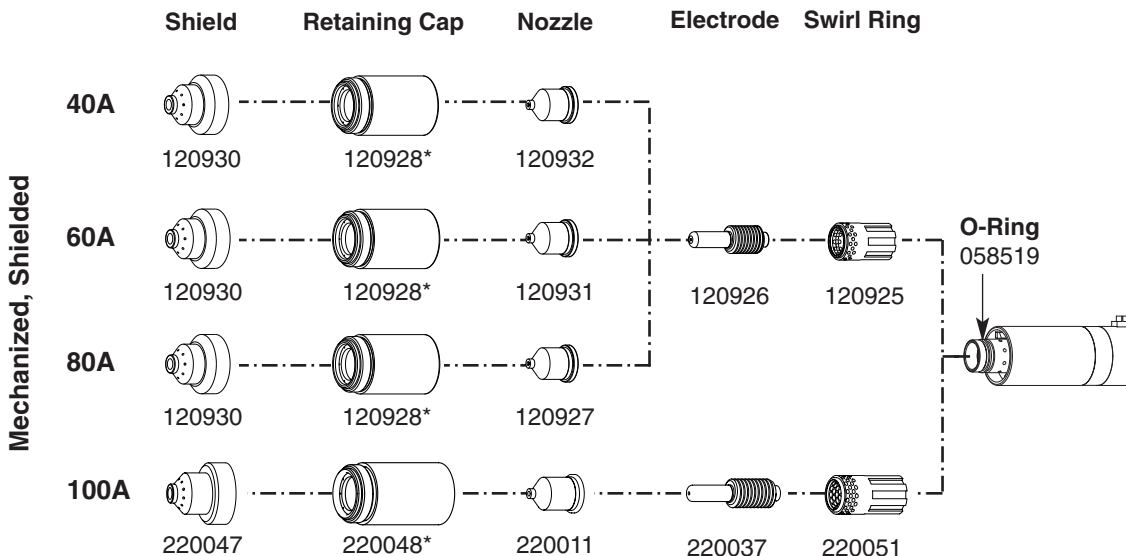
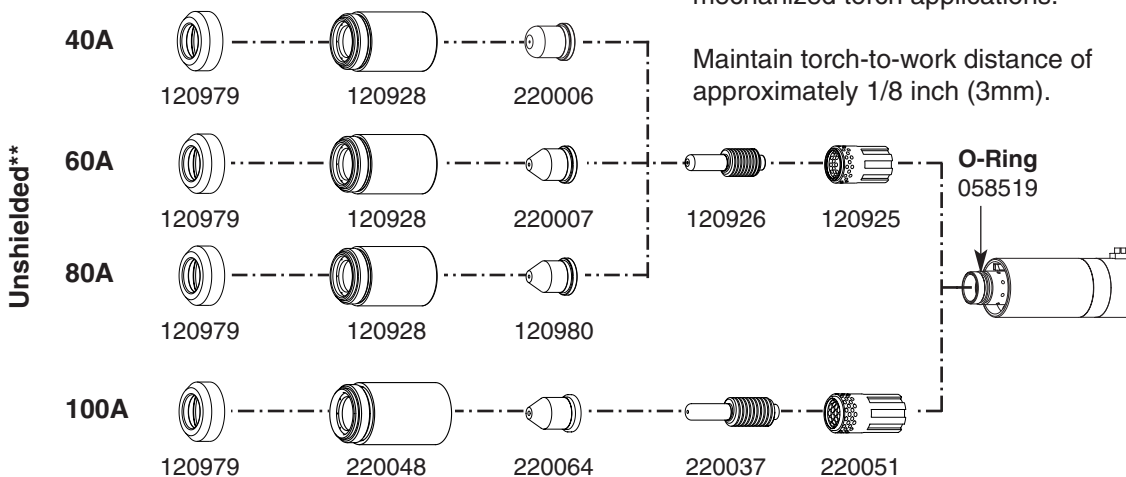


## Torch Consumable Configurations



\* Use an ohmic sensing cap when a compatible torch height controller is installed.

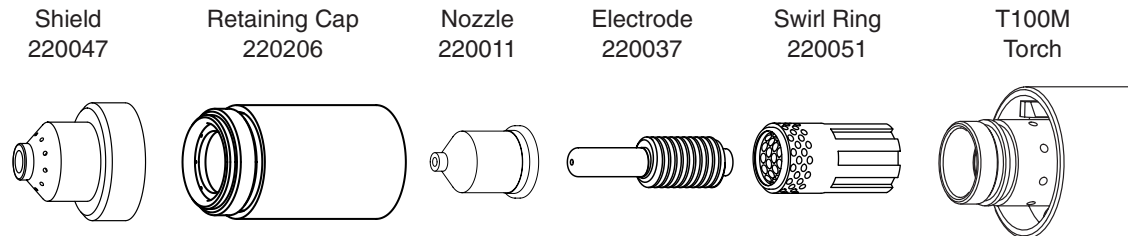
\*\* In CE countries, unshielded consumables may only be used in mechanized torch applications.



## Cut Charts

### 100 Amp Mechanized Shielded Consumables

- Torch-to-work distance for the following cut chart is 1/8 inch (3.2 mm) for all cuts.



#### Mild Steel

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 153         | 0.5          | 1/4"               | 6.4  | 208                   | 5283   | 135                   | 3429   |
|             | 155         | 0.5          | 3/8"               | 9.5  | 119                   | 3022   | 77                    | 1955   |
|             | 159         | 1.0          | 1/2"               | 12.7 | 88                    | 2235   | 57                    | 1447   |
|             | 160         | 1.0          | 5/8"               | 15.9 | 61                    | 1549   | 40                    | 1016   |
|             | 161         | 1.5          | 3/4"               | 19.0 | 47                    | 1193   | 26                    | 660    |
|             | 163         | 2.0          | 1"                 | 25.4 | 28                    | 711    | 18                    | 457    |
|             | 167         | 2.5          | 1 1/4"             | 31.8 | 19                    | 482    | 12                    | 305    |

#### Stainless

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 154         | 0.5          | 1/4"               | 6.4  | 231                   | 5867   | 150                   | 3810   |
|             | 156         | 0.5          | 3/8"               | 9.5  | 122                   | 3099   | 79                    | 2006   |
|             | 161         | 1.0          | 1/2"               | 12.7 | 79                    | 2006   | 52                    | 1320   |
|             | 162         | 1.0          | 5/8"               | 15.9 | 52                    | 1320   | 34                    | 863    |
|             | 164         | 1.5          | 3/4"               | 19.0 | 39                    | 990    | 25                    | 635    |
|             | 166         | 2.0          | 1"                 | 25.4 | 23                    | 584    | 15                    | 381    |
|             | 169         | 2.5          | 1 1/4"             | 31.8 | 14                    | 355    | 9                     | 228    |

#### Aluminum

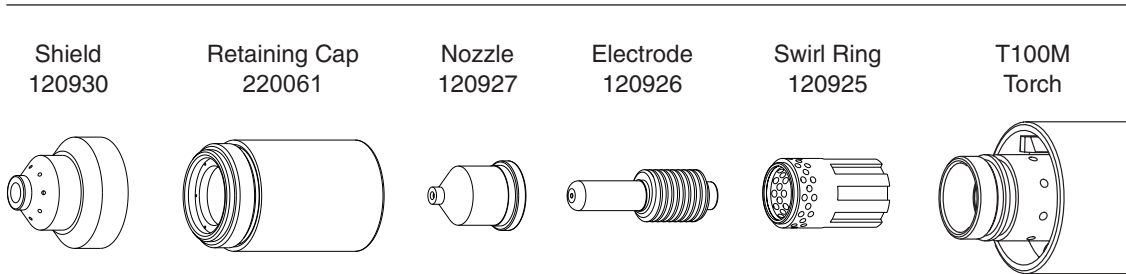
| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 154         | 0.5          | 1/4"               | 6.4  | 253                   | 6426   | 164                   | 4165   |
|             | 157         | 0.5          | 3/8"               | 9.5  | 142                   | 3606   | 92                    | 2336   |
|             | 160         | 1.0          | 1/2"               | 12.7 | 108                   | 2743   | 70                    | 1778   |
|             | 161         | 1.0          | 5/8"               | 15.9 | 77                    | 1955   | 50                    | 1270   |
|             | 162         | 1.5          | 3/4"               | 19.0 | 57                    | 1447   | 33                    | 838    |
|             | 165         | 2.0          | 1"                 | 25.4 | 33                    | 838    | 21                    | 533    |

Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires "fine tuning" for each cutting application in order to obtain the desired cut quality.

# OPERATION

## 80 Amp Mechanized Shielded Consumables

- Torch-to-work distance for the following cut chart is 1/16 inch (1.5 mm) for all cuts.



### Mild Steel

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 80          | 132         | 0.25         | 3/16"              | 4.8  | 216                   | 5486   | 140                   | 3556   |
|             | 134         |              | 1/4"               | 6.4  | 161                   | 4089   | 105                   | 2667   |
|             | 137         | 0.50         | 3/8"               | 9.5  | 94                    | 2388   | 61                    | 1549   |
|             | 140         |              | 1/2"               | 12.7 | 60                    | 1524   | 39                    | 991    |
|             | 145         | 1.00         | 5/8"               | 15.9 | 40                    | 1016   | 26                    | 660    |
|             | 148         | N/A          | 3/4"               | 19.0 | 31                    | 787    | 20                    | 508    |
|             | 150         |              | 7/8"               | 22.2 | 23                    | 584    | 15                    | 381    |
|             | 156         |              | 1"                 | 25.4 | 16                    | 406    | 10                    | 254    |

### Stainless

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 80          | 134         | 0.25         | 3/16"              | 4.8  | 216                   | 5486   | 140                   | 3556   |
|             | 136         | 0.50         | 1/4"               | 6.4  | 158                   | 4013   | 103                   | 2616   |
|             | 139         | 0.75         | 3/8"               | 9.5  | 83                    | 2108   | 54                    | 1372   |
|             | 142         |              | 1/2"               | 12.7 | 50                    | 1270   | 33                    | 838    |
|             | 145         | N/A          | 5/8"               | 15.9 | 34                    | 864    | 22                    | 559    |
|             | 150         |              | 3/4"               | 19.0 | 24                    | 610    | 16                    | 406    |
|             | 153         |              | 1"                 | 25.4 | 14                    | 356    | 9                     | 229    |

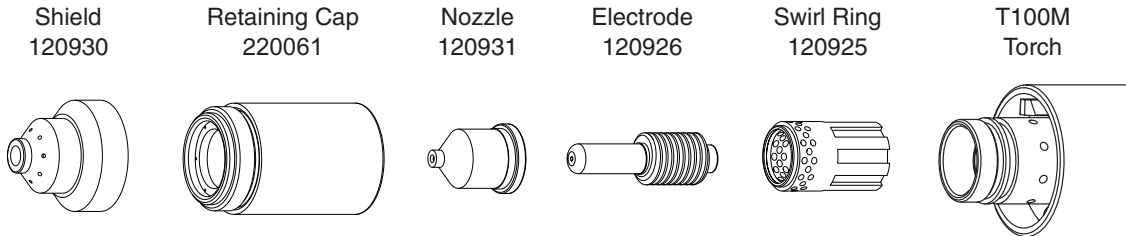
### Aluminum

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 80          | 134         | 0.25         | 1/8"               | 3.2  | 454                   | 11532  | 295                   | 7493   |
|             | 139         |              | 1/4"               | 6.4  | 176                   | 4470   | 114                   | 2896   |
|             | 143         | 0.75         | 3/8"               | 9.5  | 121                   | 3073   | 60                    | 1524   |
|             | 146         |              | 1/2"               | 12.7 | 75                    | 1905   | 37                    | 940    |
|             | 154         | N/A          | 3/4"               | 19.0 | 37                    | 940    | 19                    | 483    |

Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires "fine tuning" for each cutting application in order to obtain the desired cut quality.

**60 Amp Mechanized Shielded Consumables**

- Torch-to-work distance for the following cut chart is 1/16 inch (1.5 mm) for all cuts.



**Mild Steel**

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |             | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|-------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm          | IPM                   | mm/min | IPM                   | mm/min |
| 60          | 134         | 0            | <b>16 Ga</b>       | <b>1.5</b>  | 627                   | 15926  | 502                   | 12751  |
|             | 134         |              | <b>10 Ga</b>       | <b>3.4</b>  | 264                   | 6706   | 211                   | 5359   |
|             | 138         | 0.25         | <b>1/4"</b>        | <b>6.4</b>  | 132                   | 3353   | 86                    | 2184   |
|             | 141         | 0.75         | <b>3/8"</b>        | <b>9.5</b>  | 63                    | 1600   | 41                    | 1041   |
|             | 141         | 1.50         | <b>1/2"</b>        | <b>12.7</b> | 42                    | 1067   | 27                    | 686    |
|             | 147         |              | <b>5/8"</b>        | <b>15.9</b> | 31                    | 787    | 20                    | 512    |
|             | 153         |              | <b>3/4"</b>        | <b>19.0</b> | 22                    | 559    | 14                    | 363    |

**Stainless**

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |             | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|-------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm          | IPM                   | mm/min | IPM                   | mm/min |
| 60          | 134         | 0            | <b>16 Ga</b>       | <b>1.5</b>  | 625                   | 15875  | 406                   | 10312  |
|             | 136         | 0.25         | <b>10 Ga</b>       | <b>3.4</b>  | 244                   | 6198   | 159                   | 4039   |
|             | 139         | 0.50         | <b>1/4"</b>        | <b>6.4</b>  | 110                   | 2794   | 72                    | 1829   |
|             | 145         | 0.75         | <b>3/8"</b>        | <b>9.5</b>  | 53                    | 1346   | 34                    | 864    |
|             | 146         | 2.00         | <b>1/2"</b>        | <b>12.7</b> | 35                    | 889    | 23                    | 584    |
|             | 149         |              | <b>5/8"</b>        | <b>15.9</b> | 26                    | 660    | 17                    | 429    |
|             | 154         |              | <b>3/4"</b>        | <b>19.0</b> | 18                    | 457    | 12                    | 297    |

**Aluminum**

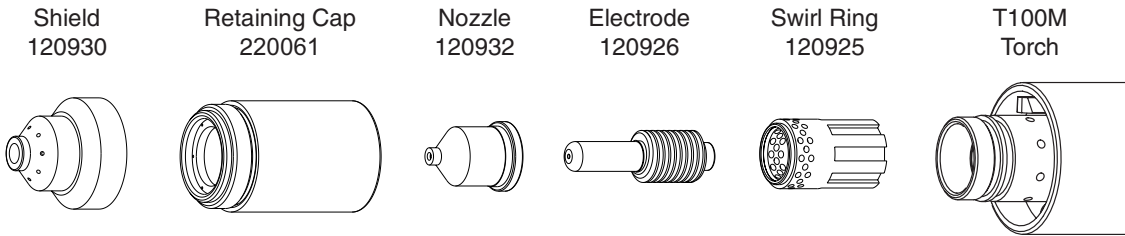
| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |             | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|-------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm          | IPM                   | mm/min | IPM                   | mm/min |
| 60          | 135         | 0            | <b>1/16"</b>       | <b>1.6</b>  | 666                   | 16916  | 433                   | 10995  |
|             | 138         | 0.25         | <b>1/8"</b>        | <b>3.2</b>  | 400                   | 10160  | 260                   | 6604   |
|             | 141         |              | <b>1/4"</b>        | <b>6.4</b>  | 145                   | 3683   | 94                    | 2388   |
|             | 146         | 0.75         | <b>3/8"</b>        | <b>9.5</b>  | 74                    | 1880   | 48                    | 1219   |
|             | 149         | 1.50         | <b>1/2"</b>        | <b>12.7</b> | 51                    | 1295   | 30                    | 762    |
|             | 153         |              | <b>5/8"</b>        | <b>15.9</b> | 33                    | 838    | 21                    | 545    |

Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires “fine tuning” for each cutting application in order to obtain the desired cut quality.

# OPERATION

## 40 Amp Mechanized Shielded Consumables

- Torch-to-work distance for the following cut chart is 1/16 inch (1.5 mm) for all cuts.



### Mild Steel

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 147         |              | <b>26 GA</b>       | <b>0.5</b> | 638                   | 16205  | 415                   | 10541  |
|             | 148         |              | <b>22 GA</b>       | <b>0.8</b> | 500                   | 12700  | 325                   | 8255   |
|             | 149         |              | <b>18 GA</b>       | <b>1.3</b> | 312                   | 7925   | 203                   | 5156   |
|             | 152         |              | <b>16 GA</b>       | <b>1.5</b> | 176                   | 4470   | 114                   | 2896   |
| 40          | 144         | 0.25         | <b>14 GA</b>       | <b>1.9</b> | 640                   | 16256  | 221                   | 5613   |
|             | 146         | 0.50         | <b>10 GA</b>       | <b>3.4</b> | 151                   | 3835   | 98                    | 2489   |
|             | 147         | 0.75         | <b>3/16"</b>       | <b>4.7</b> | 97                    | 2464   | 63                    | 1600   |
|             | 149         | 1.00         | <b>1/4"</b>        | <b>6.4</b> | 74                    | 1880   | 48                    | 1219   |

### Stainless

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 139         |              | <b>26 GA</b>       | <b>0.5</b> | 631                   | 16027  | 410                   | 10414  |
|             | 139         |              | <b>22 GA</b>       | <b>0.8</b> | 496                   | 12598  | 322                   | 8179   |
| 40          | 142         | 0.25         | <b>18 GA</b>       | <b>1.3</b> | 592                   | 15037  | 335                   | 8509   |
|             | 144         | 0.25         | <b>16 GA</b>       | <b>1.5</b> | 374                   | 9500   | 243                   | 6172   |
|             | 144         | 0.25         | <b>14 GA</b>       | <b>1.9</b> | 221                   | 5613   | 144                   | 3658   |
|             | 147         | 0.50         | <b>10 GA</b>       | <b>3.4</b> | 107                   | 2718   | 70                    | 1778   |
|             | 149         | 0.75         | <b>3/16"</b>       | <b>4.7</b> | 67                    | 1702   | 44                    | 1118   |
|             | 149         | 1.00         | <b>1/4"</b>        | <b>6.4</b> | 47                    | 1194   | 31                    | 787    |

### Aluminum

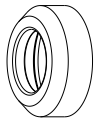
| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 150         |              | <b>1/32"</b>       | <b>0.8</b> | 610                   | 15494  | 397                   | 10084  |
|             | 152         |              | <b>1/16"</b>       | <b>1.5</b> | 268                   | 6807   | 174                   | 4420   |
| 40          | 146         | 0.25         | <b>3/32"</b>       | <b>2.4</b> | 293                   | 7442   | 190                   | 4826   |
|             | 149         | 0.50         | <b>1/8"</b>        | <b>3.2</b> | 204                   | 5182   | 133                   | 3378   |
|             | 151         | 1.00         | <b>1/4"</b>        | <b>6.4</b> | 76                    | 1930   | 49                    | 1245   |

Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires "fine tuning" for each cutting application in order to obtain the desired cut quality.

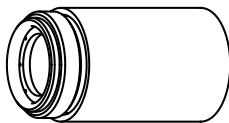
**100 Amp Unshielded Consumables**

- Torch-to-work distance for the following cut chart is 3/16 inch (4.8 mm) for all cuts.

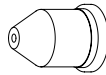
Deflector  
120979



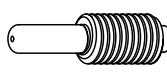
Retaining Cap  
220048



Nozzle  
220064



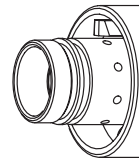
Electrode  
220037



Swirl Ring  
220051



T100M  
Torch



**Mild Steel**

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 136         | 0.5          | 1/4"               | 6.4  | 210                   | 5334   | 137                   | 3479   |
|             | 139         | 0.5          | 3/8"               | 9.5  | 122                   | 3098   | 79                    | 2006   |
|             | 142         | 1.0          | 1/2"               | 12.7 | 91                    | 2311   | 59                    | 1498   |
|             | 146         | 1.0          | 5/8"               | 15.9 | 57                    | 1447   | 37                    | 939    |
|             | 150         | 1.5          | 3/4"               | 19.0 | 43                    | 1092   | 28                    | 711    |
|             | 155         | 2.0          | 1"                 | 25.4 | 26                    | 660    | 17                    | 431    |
|             | 160         | 2.5          | 1 1/4"             | 31.8 | 16                    | 406    | 10                    | 254    |

**Stainless**

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 136         | 0.5          | 1/4"               | 6.4  | 241                   | 6121   | 157                   | 3987   |
|             | 139         | 0.5          | 3/8"               | 9.5  | 131                   | 3327   | 85                    | 2159   |
|             | 142         | 1.0          | 1/2"               | 12.7 | 81                    | 2057   | 53                    | 1346   |
|             | 146         | 1.0          | 5/8"               | 15.9 | 51                    | 1295   | 33                    | 838    |
|             | 150         | 1.5          | 3/4"               | 19.0 | 33                    | 838    | 22                    | 558    |
|             | 155         | 2.0          | 1"                 | 25.4 | 22                    | 558    | 14                    | 355    |
|             | 161         | 2.5          | 1 1/4"             | 31.8 | 11                    | 279    | 7                     | 177    |

**Aluminum**

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |      | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm   | IPM                   | mm/min | IPM                   | mm/min |
| 100         | 137         | 0.5          | 1/4"               | 6.4  | 255                   | 6477   | 166                   | 4216   |
|             | 139         | 0.5          | 3/8"               | 9.5  | 153                   | 3886   | 99                    | 2514   |
|             | 142         | 1.0          | 1/2"               | 12.7 | 107                   | 2717   | 70                    | 1778   |
|             | 147         | 1.0          | 5/8"               | 15.9 | 77                    | 1955   | 50                    | 1270   |
|             | 150         | 1.5          | 3/4"               | 19.0 | 51                    | 1295   | 33                    | 838    |
|             | 154         | 2.0          | 1"                 | 25.4 | 31                    | 787    | 20                    | 508    |

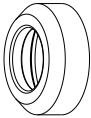
Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires "fine tuning" for each cutting application in order to obtain the desired cut quality.

# OPERATION

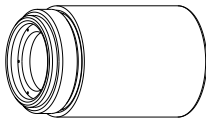
## 40 Amp Unshielded Consumables

- Torch-to-work distance for the following cut chart is 1/16 inch (1.5 mm) for all cuts.

Deflector  
120979



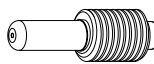
Retaining Cap  
120928



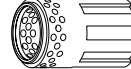
Nozzle  
220006



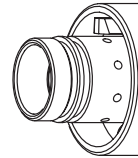
Electrode  
120926



Swirl Ring  
120925



T100M  
Torch



### Mild Steel

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 125         |              | <b>26 GA</b>       | <b>0.5</b> | 550                   | 13970  | 353                   | 8966   |
|             | 128         |              | <b>22 GA</b>       | <b>0.8</b> | 484                   | 12294  | 315                   | 8001   |
|             | 130         |              | <b>18 GA</b>       | <b>1.3</b> | 238                   | 6045   | 155                   | 3937   |
|             | 131         |              | <b>16 GA</b>       | <b>1.5</b> | 167                   | 4242   | 109                   | 2769   |
| 40          | 129         | 0.25         | <b>14 GA</b>       | <b>1.9</b> | 326                   | 8280   | 212                   | 5385   |

### Stainless

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 127         |              | <b>26 GA</b>       | <b>0.5</b> | 561                   | 14249  | 365                   | 9271   |
|             | 127         |              | <b>22 GA</b>       | <b>0.8</b> | 453                   | 11506  | 295                   | 7493   |
| 40          | 123         | 0.25         | <b>18 GA</b>       | <b>1.3</b> | 500                   | 12700  | 325                   | 8255   |
|             | 127         | 0.25         | <b>16 GA</b>       | <b>1.5</b> | 367                   | 9322   | 239                   | 6071   |
|             | 128         | 0.25         | <b>14 GA</b>       | <b>1.9</b> | 220                   | 5588   | 143                   | 3632   |

### Aluminum

| Arc Current | Arc Voltage | Pierce Delay | Material Thickness |            | Maximum Travel Speeds |        | Optimum Travel Speeds |        |
|-------------|-------------|--------------|--------------------|------------|-----------------------|--------|-----------------------|--------|
|             |             |              | Inches             | mm         | IPM                   | mm/min | IPM                   | mm/min |
| 25          | 125         |              | <b>1/32"</b>       | <b>0.8</b> | 564                   | 14326  | 366                   | 9296   |
|             | 127         |              | <b>1/16"</b>       | <b>1.5</b> | 236                   | 5994   | 153                   | 3886   |
| 40          | 127         | 0.25         | <b>3/32"</b>       | <b>2.4</b> | 261                   | 6629   | 170                   | 4318   |

Maximum travel speeds are the fastest speeds possible for cutting the material without regard to cut quality. Optimum travel speeds provide the best cut angle, least dross and best cut surface finish. **Remember that cut charts are intended to provide a good starting point for each different cut assignment.** Every cutting system requires "fine tuning" for each cutting application in order to obtain the desired cut quality.