HYPERTHERM®
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# Mild steel process selection

## For XPR® and HyPerformance® HPR400® XD

### Expected quality/speed results in inches per minute (ipm)

| Thickness (inches) | XPR | | | | | | | HPR |
|---|---|---|---|---|---|---|---|---|
| | $O_2/O_2$ | $O_2$/Air | | | | | | $O_2$/Air |
| | 30 A | 50 A | 80 A | 130 A | 170 A | 220 A | 300 A | 400 A |
| 26 GA | 215 | | | | | | | |
| 24 GA | 200 | | | | | | | |
| 22 GA | 170 | | | | | | | |
| 20 GA | 155 | | | | | | | |
| 18 GA | 110 | | | | | | | |
| 16 GA | 85 | | | | | | | |
| 14 GA | 60 | | | | | | | |
| 12 GA | 50 | 155 | 225 | | | | | |
| 1/8 | 43 | 148 | 217 | | | | | |
| 10 GA | 40 | 145 | 180 | 240 | | | | |
| 3/16 | 30 | 95 | 155 | 190 | 230 | | | |
| 1/4 | | 70 | 110 | 150 | 200 | 240 | | |
| 5/16 | | 55 | 96 | 130 | 170 | – | | |
| 3/8 | | | 75 | 110 | 140 | 150 | 180 | |
| 7/16 | | | 62 | 95 | 127 | – | – | |
| 1/2 | | | 55 | 80 | 115 | 125 | 155* | 170 |
| 9/16 | | | | 70 | 97 | 125 | 140* | – |
| 5/8 | | | | 60 | 80 | 110 | 130 | 150 |
| 3/4 | | | | 45 | 65 | 85 | 105 | 115 |
| 7/8 | | | | 32 | 55 | 75 | 90 | 100 |
| 1 | | | | 20 | 45 | 60 | 75 | 85 |
| 1-1/8 | | | | 18 | 37 | 50 | 65 | – |
| 1-1/4 | | | | 16 | 30 | 40 | 55 | 65 |
| 1-3/8 | | | | 12 | 25 | 35 | 47 | – |
| 1-1/2 | | | | 10 | 20+ | 30 | 40 | 48 |
| 1-9/16 | | | | | 17+ | – | – | – |
| 1-5/8 | | | | | 17 | 25 | 35 | – |
| 1-3/4 | | | | | 14 | 20 | 30* | 40 |
| 1-7/8 | | | | | 12 | 15 | 25* | – |
| 2 | | | | | 10 | 12 | 21*+ | 30 |
| 2-1/8 | | | | | – | 9 | 18* | – |
| 2-1/4 | | | | | – | 8 | 17* | 25 |
| 2-3/8 | | | | | 6 | 7 | 15* | – |
| 2-1/2 | | | | | | 6 | 14* | 20 |
| 2-5/8 | | | | | | | 12* | – |
| 2-3/4 | | | | | | | 10* | – |
| 2-7/8 | | | | | | | 8* | – |
| 3 | | | | | | | 7* | 10 |

| XPR | HPR |
|---|---|
| Category 3 | Non PCT |
| Category 1 | PCT |
| Category 2 | Edge start |
| Category 4 | |
| Category 5 | |

*$N_2$ used as shield gas

+ Argon assist

Our cutting systems offer a wide variety of process options to meet your requirements.

Hypertherm Associates process engineers work to optimize a range of thicknesses to obtain the best overall balance of productivity and cut quality. This optimized range is called the Process Core Thicknesses (PCT).

## Process category options and expected quality-speed results for ferrous (mild steel) processes

| XPR category | | | Description | Quality | Speed |
|---|---|---|---|---|---|
| | Number | Condition | | | |
| ■ | 1 | Process Core Thickness (PCT) | ▪ Best overall balance of productivity and cut quality<br>▪ The process is optimized for this thickness<br>▪ Virtually dross free | Very good | Very good |
| ■ | 2 | Thicker than PCT | ▪ Good choice when edge quality is more important than speed<br>▪ Some low-speed dross | Very good to excellent | Lower |
| ■ | 3 | Thinner than PCT | ▪ Good choice when speed is more important than cut edge quality<br>▪ Virtually dross free | Lower | Higher |
| ■ | 4 | Edge start for most processes | ▪ Edge start is required with the exception of argon assist processes<br>▪ Thick, low-speed dross is likely | Good | Low |
| ■ | 5 | Severance | ▪ Maximum thickness for these processes<br>▪ Edge start required<br>▪ Cut speeds are very slow, in most cases expect less than 10 in/min<br>▪ Cut edge quality can be rough<br>▪ Significant dross<br>▪ Thick-metal cutting technologies can be necessary | Very low | Very low |

Pierce settings in the cut charts are based on standard-position torch angles (at a 90° angle to the workpiece)

Learn more at www.hypertherm.com

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