

# Ultra-Cut XT® 22- Bevel Handbook Metric



Art# A-14035

**Revision:** AB

**Issue Date:** 21/8/2020

**Manual No.:** 0-5554

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Ultra-Cut XT®

Bevel Handbook No. 0-5554

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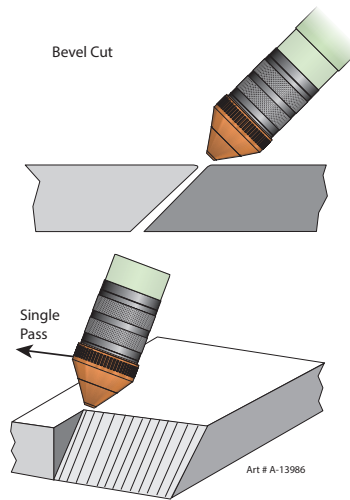
Revision Date: 21 July, 2020



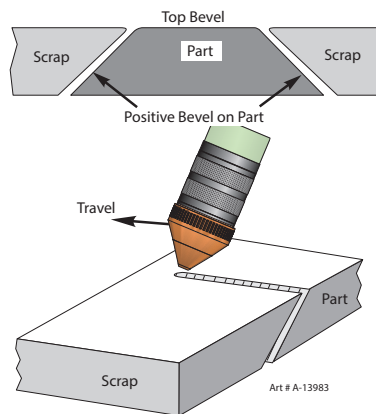
THERMAL DYNAMCIS Ultra-Cut new bevel cutting parts and cut charts will make it a lot easier to find the correct setting for standard bevel cutting applications on mild steel up to 50 mm and 45 deg. Below is a small introduction into bevel cutting.

### Basics of Plasma Beveling

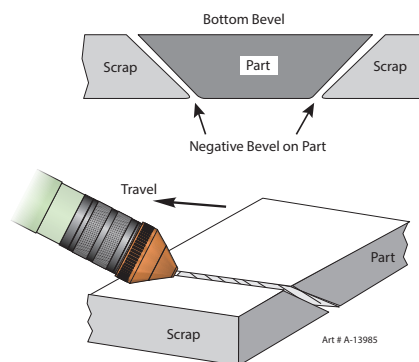
The edges of a part can be cut at an angle to allow for welding or special fit-up with other parts. A plasma bevel system can be used to make top bevels or bottom bevels. A "top" or "bottom" bevel requires only one pass around the part.



A top bevel creates a bevel facing the top of the part. This requires that the remnant plate be lifted from the table first, in order to retrieve the part.

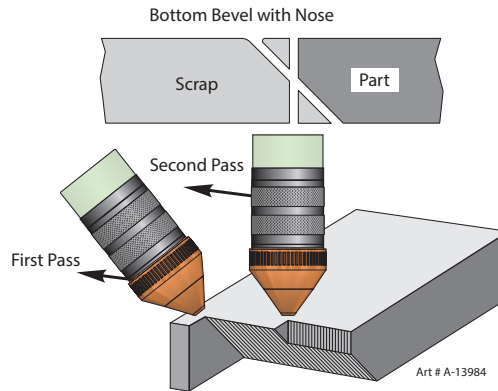


A bottom bevel places the beveled face on the bottom of the part, allowing the part to be removed from the table prior to the remnant

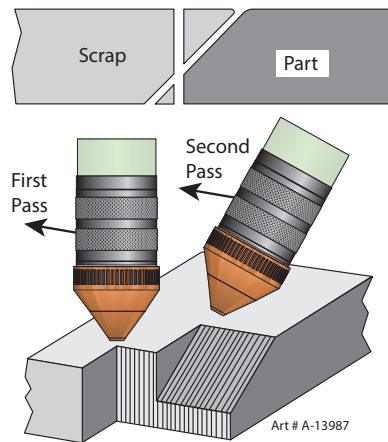


Generally, top bevel cuts produce a better quality cut part than bottom bevels. On bottom bevel cuts, burnback occurs on the top of the part, and irregularities result on the face of the cut.

Plasma bevel systems can also be used to cut bevels with a "land" or "nose" on the finished part. A bevel cut with a land will require two cut passes. When cutting multiple passes, it is important to always cut the bottom cut, or the longest cut first. Therefore, a bottom bevel with nose would require the bevel be cut first. The nose, or straight cut would occur on the second pass.



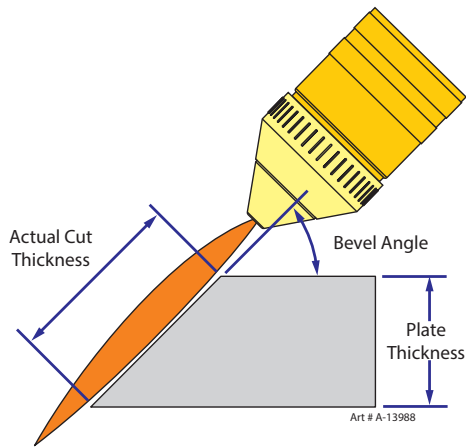
A top bevel with nose would require the nose, or straight cut, to be cut first. The bevel cut would occur on the second pass.



Three pass cuts are possible under limited circumstances. However, due to the complexity of programming, and the limitations of the process, three pass beveling is not recommended for production cut parts.

Due to plasma cutting torch limitations, the maximum thickness that can be beveled depends on the bevel angle to be cut. When bevel cutting at 45°, the actual cut thickness is 1.4 times the plate thickness. The actual cutting thickness for a given plate thickness and bevel angle is determined using this formula:

$$\text{Actual Cut Thickness} = \text{Plate Thickness} / \cos(\theta)$$

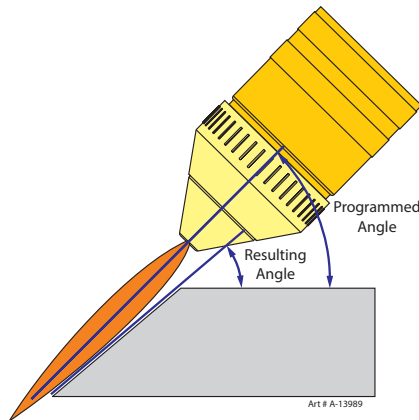


For a programmer trying to determine the feasibility of a specific application, it is more useful to solve for the maximum bevel angle that can be cut on a specific thickness of material. There are several different torches and consumable combinations that can yield different cutting capabilities, so it is necessary to know the maximum thickness that can be cut with a given setup. When the plate thickness and torch maximum cutting capability are known, the maximum bevel angle can be determined by this formula:

$$\text{Max Bevel Angle } \theta = \text{InvCos} (\text{Plate Thickness} / \text{Max Cut Thickness})$$

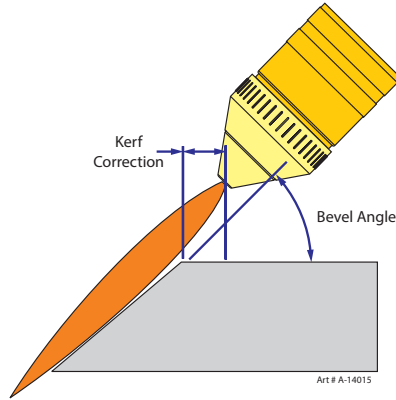
## CNC Automation

For plasma bevel cutting, there many parameters that must be considered. Even if a torch is tilted to an exact programmed angle, the resultant cut angle may be different.



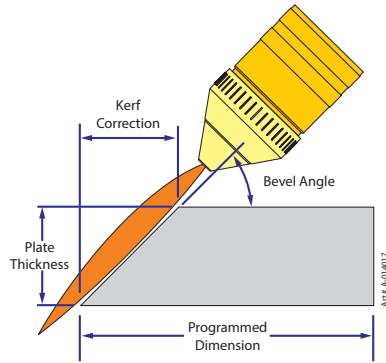
An offset must be programmed to allow for accurate resultant cut angles. The CNC should automatically correct for the difference between actual torch angle and resulting cut angle depending on material type and thickness.

Also, as the torch tilts and begins cutting through thicker material, the kerf (or material removed as a result of the cut) is increased slightly.



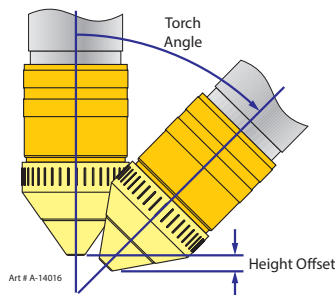
This also must be accounted for to provide accuracy and repeatability in plasma bevel cutting. Again, the CNC must automatically account for this change as a factor of material type and thickness.

In addition to the additional kerf offset for cutting through thicker material while beveling, there must be consideration for a geometric offset dependent upon whether cutting the top of the part to programmed dimension, or the bottom of the part to programmed dimension.



If the bevel cut is as shown above, the torch must offset from the programmed path by the tangent of the cut angle times the material thickness. This offset should also be automatically accounted for in the CNC control based on material type and thickness.

As a plasma torch is tilted to a bevel angle, the torch moves closer to the material. An elevation offset must be programmed to ensure the torch does not crash into the plate on tilt. Also, the material thickness is increased while cutting a bevel, and this requires an additional height offset to provide for quality cutting. Again, this offset must be automatically compensated for based on material type and thickness.

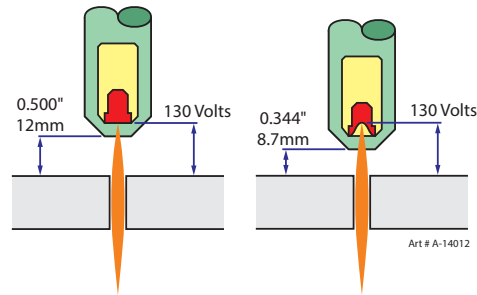


The advantage of automatic accomplishment of all of these parameters and offsets is obvious. Depending on the CNC some or all of these offsets must be accounted for in programmatic changes or with setup tables in offline software.

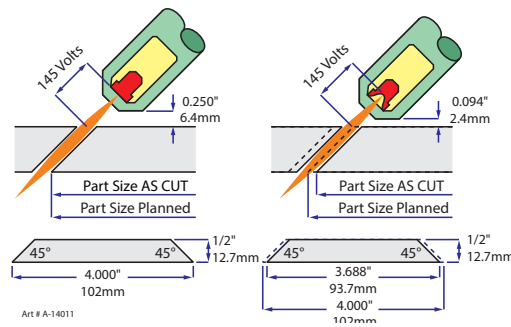


## Height Control

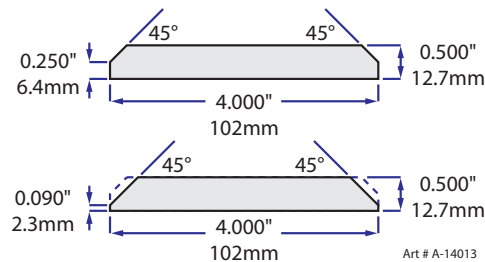
Very critical to accurate plasma beveling, particularly when attempting to cut plasma bevel with a land or nose, is the arc voltage to accurately maintain the correct elevation of the torch above the plate. It is highly recommended to use voltage sampling to set and control the arc voltage. This methods takes care of the electrode burn back and guarantees the correct distance between tip and plate.



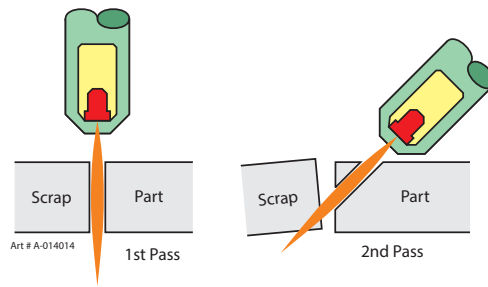
When cutting vertical, this change in torch height has a negligible effect on the part size, and only minor effect on edge bevel angle. When bevel cutting, the effect is much more dramatic.



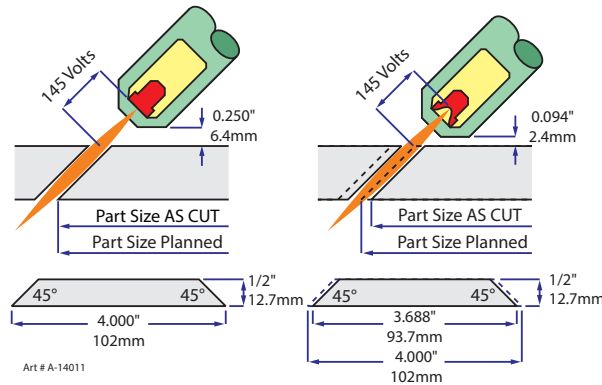
In the diagram above, it is apparent that even a small degree of change in torch elevation during cutting will result in significant changes of the dimension of the finished part. This makes the ability to cut beveled edges with a land or nose only possible with a very good torch height control.



Another challenge that has to be considered is multi-pass bevel cutting. During this style of cutting, the plasma torch cuts over the same cutting path two times.



During the first cut, the part is separated from the adjacent scrap metal. Because of the effects of thermal cutting, this scrap does not stay in position after the cut. The actual arc voltage measured during cutting is the result of the difference in potential, or voltage, measured from the torch electrode to a cross section of the material being cut. If the plasma arc attaches to more metal sections, the arc voltage is artificially high. Again a THC that does voltage sampling should be used to minimize this effect.



## Torch Design

A number of things make a torch well suited for beveling, including accuracy, concentricity, ruggedness, and nozzle design. The XT torch body and new consumables production is held to a higher standard of accuracy and concentricity. This leads to more consistent bevel angles and part size.

Finally, with its longer, pointed front end parts, the XT Torch allows the front end of the torch to stay closer to the plate when beveling, while the side of the torch has more clearance.

This means shorter arc length and therefore more control over the arc for more accurate cutting. It also means fewer crashes as the torch will more easily clear any slag or debris on the plate surface.

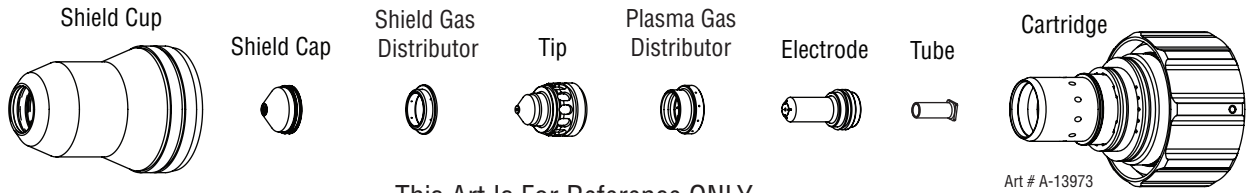


### DISCLAIMER!

All parameters in the following charts are made with a certain CNC and bevel head. Other CNCs and bevel heads will need minor adjustments according to their set ups and technical specifications

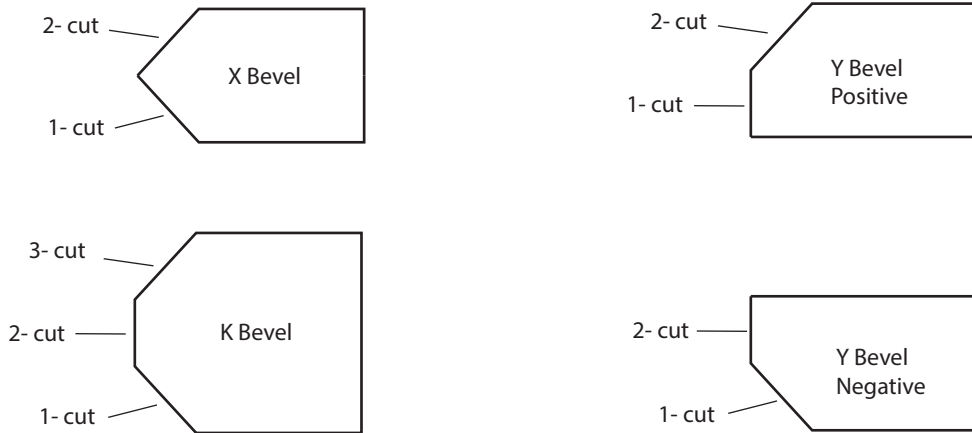
# 100 Amp Bevel

## 100 Amp Bevel Parts




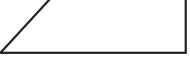
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22-1016	22-1606	22-1278	22-1600	22-1041	22-1603	9-7921	22-1020
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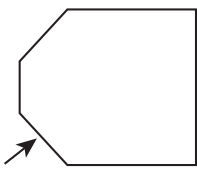
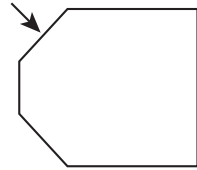


Art #

Effective Material Thickness	Min. Clearance	Pre Flow Pressure (Air)	GCM-2010			
			Cut Flow Rates / Pressures			
			Plasma (O <sub>2</sub> )		Shield (Air)	
(mm)	(mm)	(Bar)	Ball	(Bar)	Ball	(Bar)
6	2.0	2.8	55	8.3	35	8.3
8	2.0	2.8	55	8.3	35	8.3
10	2.0	2.8	55	8.3	35	8.3

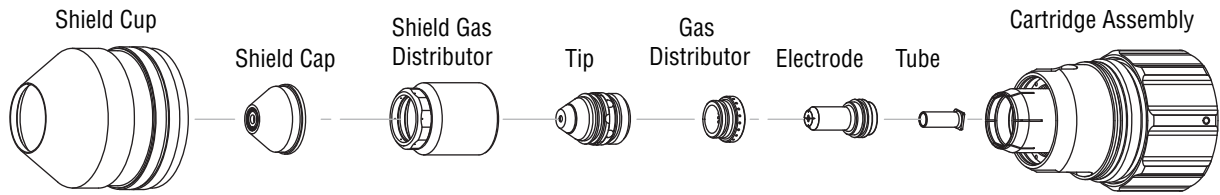
100 Amp Bevel Parameters				6	8	10			Material Thickness(mm)
Straight &V Bevel				10556	10557	10558			Process ID
				100	100	100			Standard Cut Current(A)
				2.20	2.00	2.10			Standard Kerf(mm)
				2.90	3.00	3.10			Standard Cut Height(mm)
				136	145	145			Standard Arc Voltage(V)
				2100	2700	2100			Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
Straight &V	ALL	ALL	Current(A)	80	100	100			
I&V Bevel	Bottom	0	Kerf(mm)	2.30	2.00	2.00			
		15	Kerf(mm)	1.90	1.70	1.80			
		30	Kerf(mm)	1.60	1.40	1.50			
		45	Kerf(mm)	1.60	1.20	1.10			
		0	Angle	3	2	1			
		15	Angle	20.3	17.8	15.3			
		30	Angle	35.5	33	30.5			
		45	Angle	51.5	49	46.5			
		0	Height(mm)	2.90	3.00	3.10			
		15	Height(mm)	3.90	4.00	4.10			
		30	Height(mm)	5.10	5.20	5.30			
		45	Height(mm)	7.60	7.70	7.80			
		0	Voltage(V)	135.53	144.43	144.32			
		15	Voltage(V)	136.25	146.30	147.35			
		30	Voltage(V)	139.88	150.87	152.85			
		45	Voltage(V)	144.77	160.99	168.20			
	0	Speed(mm/min)	2100	2700	2100				
	15	Speed(mm/min)	1953	2511	1953				
	30	Speed(mm/min)	1680	2160	1680				
	45	Speed(mm/min)	1092	1404	1092				
	Top	0	Kerf(mm)	2.30	2.00	2.00			
		15	Kerf(mm)	2.70	2.50	2.60			
		30	Kerf(mm)	4.20	4.00	4.10			
		45	Kerf(mm)	6.30	5.60	5.20			
		0	Angle	3	2	1			
		15	Angle	14.5	14.5	14.5			
		30	Angle	28	28	28			
		45	Angle	43	43	43			
		0	Height(mm)	2.90	3.00	3.10			
		15	Height(mm)	3.90	4.00	4.10			
		30	Height(mm)	5.10	5.20	5.30			
		45	Height(mm)	7.60	7.70	7.80			
0		Voltage(V)	135.53	144.43	144.32				
15		Voltage(V)	136.17	145.65	146.13				
30		Voltage(V)	139.15	149.69	151.22				
45		Voltage(V)	143.45	158.60	164.75				
0	Speed(mm/min)	2100	2700	2100					
15	Speed(mm/min)	1953	2511	1953					
30	Speed(mm/min)	1680	2160	1680					
45	Speed(mm/min)	1092	1404	1092					

100 Amp Bevel Parameters				6	8	10			Material Thickness(mm)	
Y&X Bevel Parameters shown are for 50/50% thickness bottom and top bevel				10556	10557	10558			Process ID	
				100	100	100			Standard Cut Current(A)	
				2.20	2.00	2.10			Standard Kerf(mm)	
				2.90	3.00	3.10			Standard Cut Height(mm)	
				136	145	145			Standard Arc Voltage(V)	
				2100	2700	2100			Standard Speed(mm/min)	
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
Y&X	ALL	ALL	Current(A)	80	100	100				
Y&X Bevel	Bottom	0	Kerf(mm)	2.10	1.90	2.00				
		15	Kerf(mm)	1.90	1.70	1.80				
		30	Kerf(mm)	0.40	0.45	0.80				
		45	Kerf(mm)	-1.40	-0.80	0.10				
		0	Angle	1	1	1				
		15	Angle	15.3	15.3	15.3				
		30	Angle	30.5	30.5	30.5				
		45	Angle	46.5	46.5	46.5				
		0	Height(mm)	2.90	3.00	3.10				
		15	Height(mm)	3.90	4.00	4.10				
		30	Height(mm)	5.10	5.20	5.30				
		45	Height(mm)	7.60	7.70	7.80				
		0	Voltage(V)	135.32	144.32	144.32				
		15	Voltage(V)	138.35	147.35	147.35				
		30	Voltage(V)	143.85	152.85	152.85				
		45	Voltage(V)	159.20	168.20	168.20				
	0	Speed(mm/min)	2100	2700	2100					
	15	Speed(mm/min)	1953	2511	1953					
	30	Speed(mm/min)	1680	2160	1680					
	45	Speed(mm/min)	1092	1404	1092					
		Top	0	Kerf(mm)	2.10	1.90	2.00			
			15	Kerf(mm)	2.70	2.50	2.60			
			30	Kerf(mm)	4.20	4.00	4.10			
			45	Kerf(mm)	6.30	5.60	5.20			
			0	Angle	1	1	1			
			15	Angle	14.5	14.5	14.5			
			30	Angle	28	28	28			
			45	Angle	43	43	43			
	0		Height(mm)	2.90	3.00	3.10				
	15		Height(mm)	3.90	4.00	4.10				
	30		Height(mm)	5.10	5.20	5.30				
	45		Height(mm)	7.60	7.70	7.80				
	0	Voltage(V)	135.32	144.32	144.32					
	15	Voltage(V)	137.13	146.13	146.13					
	30	Voltage(V)	142.22	151.22	151.22					
	45	Voltage(V)	155.75	164.75	164.75					
	0	Speed(mm/min)	2100	2700	2100					
	15	Speed(mm/min)	1953	2511	1953					
	30	Speed(mm/min)	1680	2160	1680					
	45	Speed(mm/min)	1092	1404	1092					

100 Amp Bevel Parameters				6	8	10			Material Thickness(mm)
K Bevel Parameters shown are using 4-5 mm landing with equal top and bottom bevel.				10556	10557	10558			Process ID
				100	100	100			Standard Cut Current(A)
				2.20	2.00	2.10			Standard Kerf(mm)
				2.90	3.00	3.10			Standard Cut Height(mm)
				136	145	145			Standard Arc Voltage(V)
				2100	2700	2100			Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
K	ALL	ALL	Current(A)	80	100	100			
K Bevel	Bottom	0	Kerf(mm)	2.10	1.90	2.00			
		15	Kerf(mm)	1.90	1.70	1.80			
		30	Kerf(mm)	1.60	1.40	1.50			
		45	Kerf(mm)	1.60	1.40	1.50			
		0	Angle	1	1	1			
		15	Angle	15.3	15.3	15.3			
		30	Angle	30.5	30.5	30.5			
		45	Angle	46.5	46.5	46.5			
		0	Height(mm)	2.90	3.00	3.10			
		15	Height(mm)	3.90	4.00	4.10			
		30	Height(mm)	5.10	5.20	5.30			
		45	Height(mm)	7.60	7.70	7.80			
		0	Voltage(V)	135.32	144.32	144.32			
		15	Voltage(V)	138.35	147.35	147.35			
		30	Voltage(V)	143.85	152.85	152.85			
		45	Voltage(V)	159.20	168.20	168.20			
	0	Speed(mm/min)	2100	2700	2100				
	15	Speed(mm/min)	1953	2511	1953				
	30	Speed(mm/min)	1680	2160	1680				
	45	Speed(mm/min)	1092	1404	1092				
	Top	0	Kerf(mm)	2.10	1.90	2.00			
		15	Kerf(mm)	2.70	2.50	2.60			
		30	Kerf(mm)	4.20	4.00	4.10			
		45	Kerf(mm)	6.30	6.10	6.20			
		0	Angle	1	1	1			
		15	Angle	14.5	14.5	14.5			
		30	Angle	28	28	28			
		45	Angle	43	43	43			
0		Height(mm)	2.90	3.00	3.10				
15		Height(mm)	3.90	4.00	4.10				
30		Height(mm)	5.10	5.20	5.30				
45		Height(mm)	7.60	7.70	7.80				
0		Voltage(V)	135.32	144.32	144.32				
15		Voltage(V)	137.13	146.13	146.13				
30		Voltage(V)	142.22	151.22	151.22				
45		Voltage(V)	155.75	164.75	164.75				
0	Speed(mm/min)	2100	2700	2100					
15	Speed(mm/min)	1953	2511	1953					
30	Speed(mm/min)	1680	2160	1680					
45	Speed(mm/min)	1092	1404	1092					

# 150-200 Amp Bevel

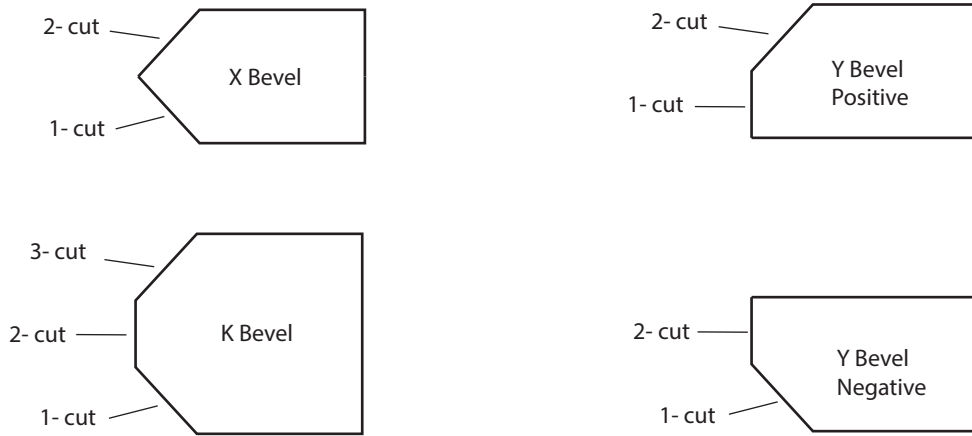
## 150 Amp Bevel Parts



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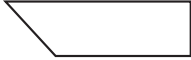

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22-1305	22-1607	22-1610	22-1601	22-1041	22-1605	9-7921	22-1300
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Art #

Material Thickness (mm)	Manual Gas Control				
	Pre Flow Pressure (Air) (Bar)	Cut Flow Rates / Pressures			
		Plasma (O <sub>2</sub> )		Shield (Air)	
		Ball	(Bar)	Ball	(Bar)
10	5.5	62	8.3	45	8.3
12	5.5	62	8.3	45	8.3
15	5.5	62	8.3	45	8.3

150 Amp Bevel Parameters				10	12	15			Material Thickness(mm)
Straight &V Bevel				10089	10090	10091			Process ID
				150	150	150			Standard Cut Current(A)
				2.40	2.50	2.70			Standard Kerf(mm)
				2.70	2.70	2.80			Standard Cut Height(mm)
				145	145	148			Standard Arc Voltage(V)
				2500	1900	1200			Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
Straight &V	ALL	ALL	Current(A)	130	140	140			
I&V Bevel	Bottom	0	Kerf(mm)	2.30	2.36	2.5			
		15	Kerf(mm)	2.10	2.16	2.3			
		30	Kerf(mm)	2.10	2.24	2.50			
		45	Kerf(mm)	3	3.46	4.2			
		0	Angle	1	1	1			
		15	Angle	15.3	15.3	15.3			
		30	Angle	30.5	30.5	30.5			
		45	Angle	46.5	46.5	46.5			
		0	Height(mm)	2.70	2.70	2.80			
		15	Height(mm)	3.7	3.7	3.80			
		30	Height(mm)	4.9	4.9	5			
		45	Height(mm)	7.4	7.4	7.5			
		0	Voltage(V)	146	145.05	147			
		15	Voltage(V)	149.8	149.06	150.95			
		30	Voltage(V)	154.88	154.43	156.75			
		45	Voltage(V)	170.75	170.93	174.2			
	0	Speed(mm/min)	2500	1900	1200				
	15	Speed(mm/min)	2325	1767	1116				
	30	Speed(mm/min)	2000	1497.2	924				
	45	Speed(mm/min)	1300	934.8	540				
	Top	0	Kerf(mm)	2.3	2.36	2.5			
		15	Kerf(mm)	2.8	2.86	3			
		30	Kerf(mm)	4.3	4.24	4.2			
		45	Kerf(mm)	6.3	6.48	6.8			
		0	Angle	1	1	1			
		15	Angle	14.5	14.5	14.5			
		30	Angle	28	28	28			
		45	Angle	43	43	43			
		0	Height(mm)	2.7	2.7	2.8			
		15	Height(mm)	3.7	3.7	3.8			
		30	Height(mm)	4.9	4.9	5			
		45	Height(mm)	7.4	7.4	7.5			
0		Voltage(V)	146.08	145.05	146.5				
15		Voltage(V)	149	148.09	149.73				
30		Voltage(V)	153.78	152.88	154.53				
45		Voltage(V)	168.38	167.67	169.6				
0	Speed(mm/min)	2500	1900	1200					
15	Speed(mm/min)	2325	1767	1116					
30	Speed(mm/min)	2000	1520	960					
45	Speed(mm/min)	1300	988	624					



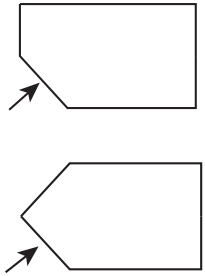
# 150 Amp Bevel Parameters

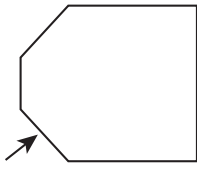
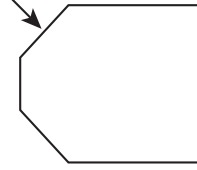
Y&X Bevel

Parameters shown are for 50/50% thickness bottom and top bevel

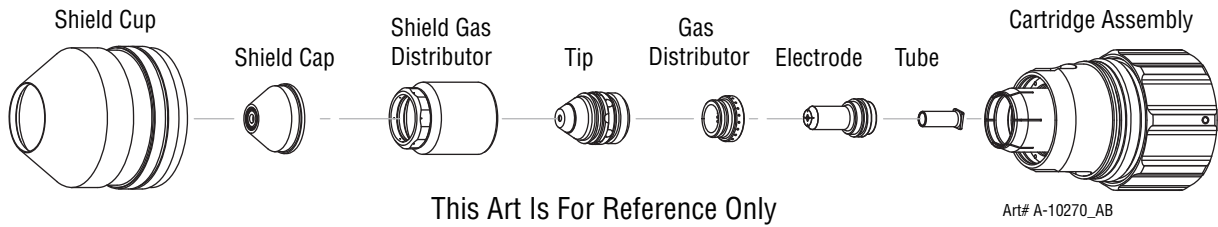
10	12	15			Material Thickness(mm)
10089	10090	10091			Process ID
150	150	150			Standard Cut Current(A)
2.40	2.50	2.70			Standard Kerf(mm)
2.70	2.70	2.80			Standard Cut Height(mm)
145	145	148			Standard Arc Voltage(V)
2500	1900	1200			Standard Speed(mm/min)

Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data					
Y&X	ALL	ALL	Current(A)	130	140	140		
Y&X Bevel	Bottom	0	Kerf(mm)	2.3	2.36	2.5		
		15	Kerf(mm)	2.1	2.16	2.3		
		30	Kerf(mm)	0.8	1.02	1.4		
		45	Kerf(mm)	0.6	0.82	1.2		
		0	Angle	1	1	1		
		15	Angle	15.3	15.3	15.3		
		30	Angle	30.5	30.5	30.5		
		45	Angle	46.5	46.5	46.5		
		0	Height(mm)	2.7	2.7	2.8		
		15	Height(mm)	3.7	3.7	3.8		
		30	Height(mm)	4.9	4.9	5		
		45	Height(mm)	7.4	7.4	7.5		
		0	Voltage(V)	146.08	145.048	146.5		
		15	Voltage(V)	149.8	149.06	150.95		
		30	Voltage(V)	154.88	154.428	156.75		
		45	Voltage(V)	170.75	170.93	174.2		
	0	Speed(mm/min)	2500	1900	1200			
	15	Speed(mm/min)	2325	1767	1116			
	30	Speed(mm/min)	2000	1497.2	924			
	45	Speed(mm/min)	1300	934.8	540			
	Top	0	Kerf(mm)	2.3	2.36	2.5		
		15	Kerf(mm)	2.8	2.86	3		
		30	Kerf(mm)	4.3	4.24	4.2		
		45	Kerf(mm)	6.3	6.48	6.8		
		0	Angle	1	1	1		
		15	Angle	14.5	14.5	14.5		
		30	Angle	28	28	28		
		45	Angle	43	43	43		
0		Height(mm)	2.7	2.7	2.8			
15		Height(mm)	3.7	3.7	3.8			
30		Height(mm)	4.9	4.9	5			
45		Height(mm)	7.4	7.4	7.5			
0		Voltage(V)	146.08	145.048	146.5			
15		Voltage(V)	149	148.092	149.73			
30		Voltage(V)	153.78	152.88	154.53			
45		Voltage(V)	168.38	167.668	169.6			
0	Speed(mm/min)	2500	1900	1200				
15	Speed(mm/min)	2325	1767	1116				
30	Speed(mm/min)	2000	1520	960				
45	Speed(mm/min)	1300	988	624				

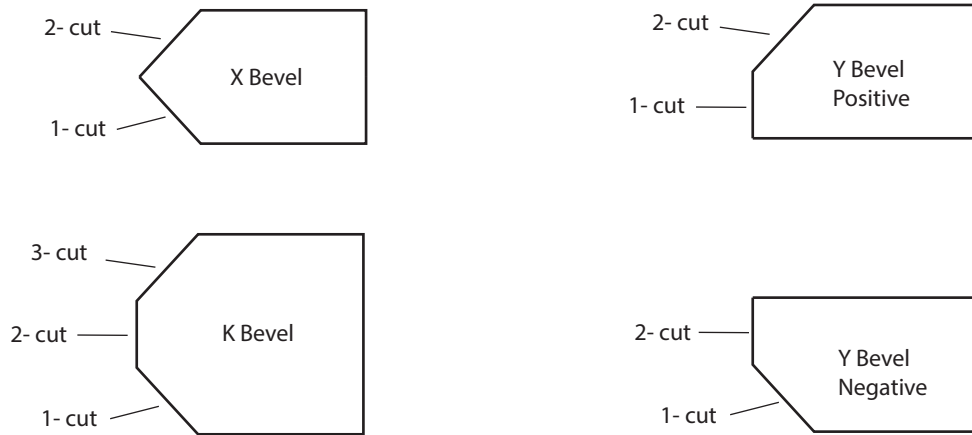


150 Amp Bevel Parameters				10	12	15			Material Thickness(mm)
<b>K Bevel</b> Parameters shown are using 4-5 mm landing with equal top and bottom bevel.				10089	10090	10091			Process ID
				150	150	150			Standard Cut Current(A)
				2.40	2.50	2.70			Standard Kerf(mm)
				2.70	2.70	2.80			Standard Cut Height(mm)
				145	145	148			Standard Arc Voltage(V)
				2500	1900	1200			Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
K	ALL	ALL	Current(A)	130	140	140			
K Bevel	Bottom	0	Kerf(mm)	2.3	2.36	2.5			
		15	Kerf(mm)	2.1	2.16	2.3			
		30	Kerf(mm)	2.1	2.24	2.5			
		45	Kerf(mm)	3	4.26	6.2			
		0	Angle	1	-1.2	-4.5			
		15	Angle	15.3	15.3	15.3			
		30	Angle	30.5	30.5	30.5			
		45	Angle	46.5	46.5	46.5			
		0	Height(mm)	2.7	2.7	2.8			
		15	Height(mm)	3.7	3.7	3.8			
		30	Height(mm)	4.9	4.9	5			
		45	Height(mm)	7.4	7.4	7.5			
		0	Voltage(V)	146.08	145.048	146.5			
		15	Voltage(V)	149.8	149.06	150.95			
		30	Voltage(V)	154.88	154.428	156.75			
		45	Voltage(V)	170.75	170.93	174.2			
	0	Speed(mm/min)	2500	1900	1200				
	15	Speed(mm/min)	2325	1767	1116				
	30	Speed(mm/min)	2000	1497.2	924				
	45	Speed(mm/min)	1300	934.8	540				
	Top	0	Kerf(mm)	2.30	2.36	2.50			
		15	Kerf(mm)	2.80	2.86	3.00			
		30	Kerf(mm)	4.30	4.24	4.20			
		45	Kerf(mm)	6.30	7.24	8.70			
		0	Angle	1	-1.2	-4.5			
		15	Angle	14.5	14.5	14.5			
		30	Angle	28	28	28			
		45	Angle	43	43	43			
0		Height(mm)	2.70	2.70	2.80				
15		Height(mm)	3.70	3.70	3.80				
30		Height(mm)	4.90	4.90	5.00				
45		Height(mm)	7.40	7.40	7.50				
0		Voltage(V)	146	145	147				
15		Voltage(V)	149	148	150				
30		Voltage(V)	154	153	155				
45		Voltage(V)	168	168	170				
0	Speed(mm/min)	2500	1900	1200					
15	Speed(mm/min)	2325	1767	1116					
30	Speed(mm/min)	2000	1520	960					
45	Speed(mm/min)	1300	988	624					

## 200 Amp Bevel Parts


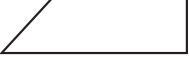






22-1305	22-1608	22-1295	22-1602	22-1042	22-1605	9-7921	22-1300
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Art #

Effective Material Thickness	Min. Clearance	Pre Flow Pressure (Air)	GCM-2010			
			Cut Flow Rates / Pressures			
			Plasma (O <sub>2</sub> )		Shield (Air)	
(mm)	(mm)	(Bar)	Ball	(Bar)	Ball	(Bar)
10	2.0	1.0	100	6.9	Set Shield Gas switch to "Pressure"	6.9
12	2.0	1.0	100	6.9		6.9
15	2.0	1.0	100	6.9		6.9
20	2.0	1.0	100	6.9		6.9
25	2.0	1.0	100	6.9		6.9

200 Amp Bevel Parameters				10	12	15	20	25	Material Thickness(mm)
Straight &V Bevel				10171	10172	10173	10174	10175	Process ID
				200	200	200	200	200	Standard Cut Current(A)
				3.2	3.2	3.3	4.7	4.9	Standard Kerf(mm)
				4.1	4.2	4.4	5.1	5.1	Standard Cut Height(mm)
				154	156	160	164	167	Standard Arc Voltage(V)
				3100	2700	2100	1600	1245	Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
Straight &V	ALL	ALL	Current(A)	200	200	200	200	200	
I&V Bevel	Bottom	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90	
		15	Kerf(mm)	3.30	3.42	3.70	5.20	5.50	
		30	Kerf(mm)	3.20	3.40	3.80	5.70	6.40	
		45	Kerf(mm)	3.60	3.92	4.50	6.50	7.30	
		0	Angle	1	1.2	1.5	1	0.5	
		15	Angle	16.5	16.1	15.4	15.4	15.4	
		30	Angle	32	31.6	31.1	31.1	31.1	
		45	Angle	47	46.8	46.6	45.6	44.5	
		0	Height(mm)	4.10	4.20	4.40	5.10	5.10	
		15	Height(mm)	5.10	5.20	5.40	6.10	6.10	
		30	Height(mm)	6.10	6.20	6.40	7.35	7.60	
		45	Height(mm)	8.10	8.20	8.40	9.45	9.80	
		0	Voltage(V)	154.42	156.42	160.42	163.93	166.45	
		15	Voltage(V)	157.35	159.35	163.35	167.29	170.23	
		30	Voltage(V)	164.32	166.32	170.32	175.60	179.88	
		45	Voltage(V)	174.77	176.77	180.77	187.00	192.23	
	0	Speed(mm/min)	3100	2700	2100	1600	1245		
	15	Speed(mm/min)	2883	2511	1953	1488	1157.85		
	30	Speed(mm/min)	2077	1809	1407	1056	809.25		
	45	Speed(mm/min)	1550	1350	1050	760	560.25		
	Top	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90	
		15	Kerf(mm)	3.80	3.64	3.50	4.90	5.10	
		30	Kerf(mm)	5.10	4.78	4.40	5.70	5.80	
		45	Kerf(mm)	6.70	6.50	6.30	7.70	7.90	
		0	Angle	1	1.2	1.5	1	0.5	
		15	Angle	15	15	15	14.5	14	
		30	Angle	30	29.6	29	29	29	
		45	Angle	45	44.2	43	43	43	
		0	Height(mm)	4.10	4.20	4.40	5.10	5.10	
		15	Height(mm)	5.10	5.20	5.40	6.10	6.10	
		30	Height(mm)	6.10	6.20	6.40	7.35	7.60	
		45	Height(mm)	8.10	8.20	8.40	9.45	9.80	
0		Voltage(V)	154.42	156.42	160.42	163.93	166.45		
15		Voltage(V)	157.42	159.42	163.42	167.54	170.67		
30		Voltage(V)	163.70	165.70	169.70	175.00	179.30		
45		Voltage(V)	173.90	175.90	179.90	185.86	190.82		
0	Speed(mm/min)	3100	2700	2100	1600	1245			
15	Speed(mm/min)	2883	2511	1953	1488	1157.85			
30	Speed(mm/min)	2077	1809	1407	1072	834.15			
45	Speed(mm/min)	1550	1350	1050	800	622.5			

200 Amp Bevel Parameters				10	12	15	20	25	Material Thickness(mm)	
Y&X Bevel				10171	10172	10173	10174	10175	Process ID	
Parameters shown are for 50/50% thickness bottom and top bevel				200	200	200	200	200	Standard Cut Current(A)	
				3.2	3.2	3.3	4.7	4.9	Standard Kerf(mm)	
				4.1	4.2	4.4	5.1	5.1	Standard Cut Height(mm)	
				154	156	160	164	167	Standard Arc Voltage(V)	
				3100	2700	2100	1600	1245	Standard Speed(mm/min)	
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
Y&X	ALL	ALL	Current(A)	200	200	200	200	200		
Y&X Bevel	Bottom	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90	 	
		15	Kerf(mm)	3.30	3.42	3.70	5.20	5.50		
		30	Kerf(mm)	1.70	1.90	2.30	4.20	4.90		
		45	Kerf(mm)	1.40	1.56	1.90	3.00	2.90		
		0	Angle	1	1.2	1.5	1	0.5		
		15	Angle	16.5	16.06	15.4	15.4	15.4		
		30	Angle	32	31.64	31.1	31.1	31.1		
		45	Angle	47	46.84	46.6	45.55	44.5		
		0	Height(mm)	4.10	4.20	4.40	5.10	5.10		
		15	Height(mm)	5.10	5.20	5.40	6.10	6.10		
		30	Height(mm)	6.10	6.20	6.40	7.35	7.60		
		45	Height(mm)	8.10	8.20	8.40	9.45	9.80		
		0	Voltage(V)	154.42	156.42	160.42	163.94	166.45		
		15	Voltage(V)	157.35	159.35	163.35	167.29	170.23		
	30	Voltage(V)	164.32	166.32	170.32	175.60	179.88			
	45	Voltage(V)	174.77	176.77	180.77	187.00	192.23			
	0	Speed(mm/min)	3100	2700	2100	1600	1245			
	15	Speed(mm/min)	2883	2511	1953	1488	1157.85			
	30	Speed(mm/min)	2077	1809	1407	1056	809.25			
	45	Speed(mm/min)	1550	1350	1050	760	560.25			
		Top	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90	 
			15	Kerf(mm)	3.80	3.64	3.50	4.90	5.10	
			30	Kerf(mm)	5.10	4.78	4.40	5.70	5.80	
			45	Kerf(mm)	6.70	6.50	6.30	7.70	7.90	
			0	Angle	1	1.2	1.5	1	0.5	
			15	Angle	15	15	15	14.5	14	
			30	Angle	30	29.6	29	29	29	
			45	Angle	45	44.2	43	43	43	
	0		Height(mm)	4.10	4.20	4.40	5.10	5.10		
	15		Height(mm)	5.10	5.20	5.40	6.10	6.10		
	30		Height(mm)	6.10	6.20	6.40	7.35	7.60		
	45		Height(mm)	8.10	8.20	8.40	9.45	9.80		
	0		Voltage(V)	154.42	156.42	160.42	163.94	166.45		
	15		Voltage(V)	157.42	159.42	163.42	167.55	170.67		
	30	Voltage(V)	163.70	165.70	169.70	175.00	179.30			
	45	Voltage(V)	173.90	175.90	179.90	185.86	190.82			
	0	Speed(mm/min)	3100	2700	2100	1600	1245			
	15	Speed(mm/min)	2883	2511	1953	1488	1157.85			
	30	Speed(mm/min)	2077	1809	1407	1072	834.15			
	45	Speed(mm/min)	1550	1350	1050	800	622.5			

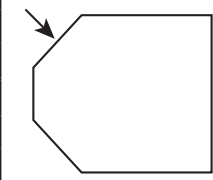
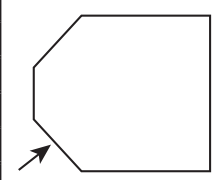
## 200 Amp Bevel Parameters

K Bevel

Parameters shown are using 4-5 mm landing with equal top and bottom bevel.

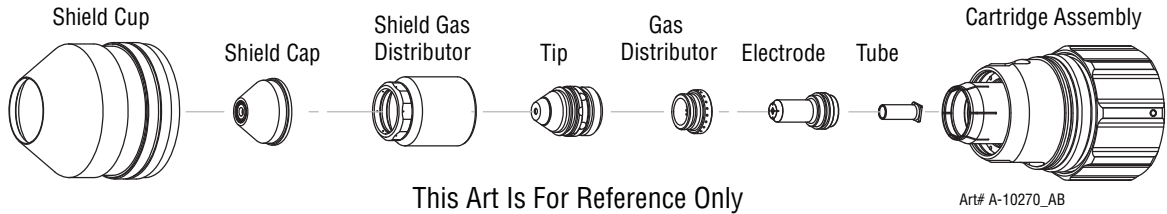
	10	12	15	20	25	Material Thickness(mm)
	10171	10172	10173	10174	10175	Process ID
	200	200	200	200	200	Standard Cut Current(A)
	3.2	3.2	3.3	4.7	4.9	Standard Kerf(mm)
	4.1	4.2	4.4	5.1	5.1	Standard Cut Height(mm)
	154	156	160	164	167	Standard Arc Voltage(V)
	3100	2700	2100	1600	1245	Standard Speed(mm/min)

Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
K	ALL	ALL	Current(A)	200	200	200	200	200		
K Bevel	Bottom	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90		
		15	Kerf(mm)	3.30	3.42	3.70	5.20	5.50		
		30	Kerf(mm)	1.70	1.90	2.30	4.20	4.90		
		45	Kerf(mm)	1.40	1.56	1.90	3.00	2.90		
		0	Angle	1	1.2	1.5	1	0.5		
		15	Angle	16.5	16.06	15.4	15.4	15.4		
		30	Angle	32	31.64	31.1	31.1	31.1		
		45	Angle	47	46.84	46.6	45.55	44.5		
		0	Height(mm)	4.10	4.20	4.40	5.10	5.10		
		15	Height(mm)	5.10	5.20	5.40	6.10	6.10		
		30	Height(mm)	6.10	6.20	6.40	7.35	7.60		
		45	Height(mm)	8.10	8.20	8.40	9.45	9.80		
		0	Voltage(V)	154.42	156.42	160.42	163.94	166.45		
		15	Voltage(V)	157.35	159.35	163.35	167.29	170.23		
		30	Voltage(V)	164.32	166.32	170.32	175.60	179.88		
		45	Voltage(V)	174.77	176.77	180.77	187.00	192.23		
		0	Speed(mm/min)	3100	2700	2100	1600	1245		
		15	Speed(mm/min)	2883	2511	1953	1488	1157.85		
		30	Speed(mm/min)	2077	1809	1407	1056	809.25		
		45	Speed(mm/min)	1550	1350	1050	760	560.25		
		K Bevel	Top	0	Kerf(mm)	3.20	3.20	3.30	4.70	4.90
				15	Kerf(mm)	3.80	3.64	3.50	4.90	5.10
				30	Kerf(mm)	5.10	4.78	4.40	5.70	5.80
				45	Kerf(mm)	6.70	6.50	6.30	7.70	7.90
				0	Angle	1	1.2	1.5	1	0.5
				15	Angle	15	15	15	14.5	14
				30	Angle	30	29.6	29	29	29
				45	Angle	45	44.2	43	43	43
0	Height(mm)			4.10	4.20	4.40	5.10	5.10		
15	Height(mm)			5.10	5.20	5.40	6.10	6.10		
30	Height(mm)			6.10	6.20	6.40	7.35	7.60		
45	Height(mm)			8.10	8.20	8.40	9.45	9.80		
0	Voltage(V)			154.42	156.42	160.42	163.94	166.45		
15	Voltage(V)			157.42	159.42	163.42	167.55	170.67		
30	Voltage(V)			163.70	165.70	169.70	175.00	179.30		
45	Voltage(V)			173.90	175.90	179.90	185.86	190.82		
0	Speed(mm/min)			3100	2700	2100	1600	1245		
15	Speed(mm/min)			2883	2511	1953	1488	1157.85		
30	Speed(mm/min)			2077	1809	1407	1072	834.15		
45	Speed(mm/min)			1550	1350	1050	800	622.5		

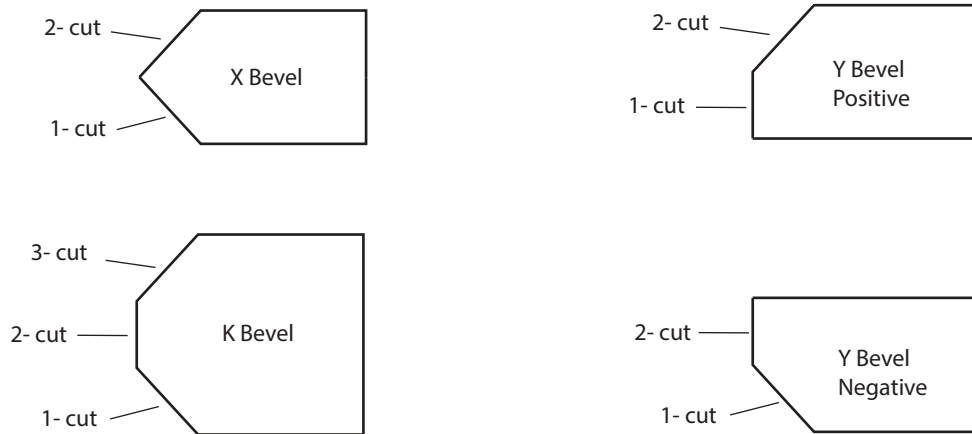


# 300 Amp Bevel

## 300 Amp Bevel Parts



22-1305	22-1105	22-1295	22-1160	22-1042	22-1308	9-7921	22-1300
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Art #

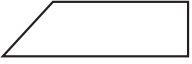
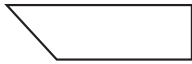
Effective Material Thickness	Min. Clearance	GCM-2010			
		Pre Flow Pressure (Air)	Cut Flow Rates / Pressures		Set Shield Gas switch to "Pressure"
			Plasma (O <sub>2</sub> )		
(mm)	(mm)	(Bar)	Ball (Bar)	Ball (Bar)	(Bar)
20	2.0	1.4	100	6.9	6.9
25	2.0	1.4	100	6.9	6.9
30	2.0	1.4	100	6.9	6.9

### 300 Amp Bevel Parameters

Straight &V Bevel

<b>20</b>	<b>25</b>	<b>30</b>			Material Thickness(mm)
10744	10745	10746			Process ID
300	300	300			Standard Cut Current(A)
3.5	4.0	3.6			Standard Kerf(mm)
5.1	5.5	6.0			Standard Cut Height(mm)
165	168	169			Standard Arc Voltage(V)
2200	1500	1200			Standard Speed(mm/min)

Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
Straight &V	ALL	ALL	Current(A)	300	300	300			
I&V Bevel	Bottom	0	Kerf(mm)	3.50	4.00	3.60			
		15	Kerf(mm)	4.60	5.15	4.80			
		30	Kerf(mm)	6.20	6.70	6.30			
		45	Kerf(mm)	8.50	9.00	8.60			
		0	Angle	0	0	0			
		15	Angle	15	15	15			
		30	Angle	31	30.5	30			
		45	Angle	46.5	45.8	45			
		0	Height(mm)	5.10	5.50	6.00			
		15	Height(mm)	6.10	6.50	7.00			
		30	Height(mm)	7.60	8.00	8.50			
		45	Height(mm)	9.80	10.20	10.70			
		0	Voltage(V)	166.08	168.83	169.58			
		15	Voltage(V)	168.95	171.95	172.95			
		30	Voltage(V)	177.20	180.20	181.20			
		45	Voltage(V)	188.93	192.43	193.93			
	0	Speed(mm/min)	2200	1500	1200				
	15	Speed(mm/min)	2046	1395	1116				
	30	Speed(mm/min)	1474	967.5	744				
	45	Speed(mm/min)	1100	637.5	420				
		Top	0	Kerf(mm)	3.50	4.00	3.60		
			15	Kerf(mm)	4.40	4.85	4.40		
			30	Kerf(mm)	4.70	5.55	5.50		
			45	Kerf(mm)	4.70	7.10	8.60		
			0	Angle	0	0	0		
			15	Angle	15	14.5	14		
			30	Angle	30.3	29.6	29		
			45	Angle	46	45	44		
			0	Height(mm)	5.10	5.50	6.00		
			15	Height(mm)	6.10	6.50	7.00		
			30	Height(mm)	7.60	8.00	8.50		
			45	Height(mm)	9.80	10.20	10.70		
	0		Voltage(V)	166.08	168.83	169.58			
	15		Voltage(V)	166.60	170.25	171.90			
	30		Voltage(V)	175.05	179.05	181.05			
	45		Voltage(V)	187.43	191.20	192.98			
	0	Speed(mm/min)	2200	1500	1200				
	15	Speed(mm/min)	2046	1395	1116				
	30	Speed(mm/min)	1474	967.5	744				
	45	Speed(mm/min)	1100	675	480				


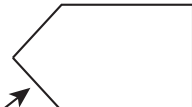
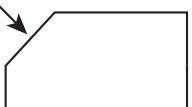





### 300 Amp Bevel Parameters

Y&X Bevel

Parameters shown are for 50/50% thickness bottom and top bevel

				20	25	30			Material Thickness(mm)	
				10744	10745	10746			Process ID	
				300	300	300			Standard Cut Current(A)	
				3.5	4.0	3.6			Standard Kerf(mm)	
				5.1	5.5	6.0			Standard Cut Height(mm)	
				165	168	169			Standard Arc Voltage(V)	
				2200	1500	1200			Standard Speed(mm/min)	
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
Y&X	ALL	ALL	Current(A)	300	300	300				
Y&X Bevel	Bottom	0	Kerf(mm)	3.50	4.00	3.60			 	
		15	Kerf(mm)	4.60	5.15	4.80				
		30	Kerf(mm)	4.70	4.70	3.80				
		45	Kerf(mm)	5.30	4.90	3.60				
		0	Angle	0	0	0				
		15	Angle	15	15	15				
		30	Angle	31	30.5	30				
		45	Angle	46.5	45.75	45				
		0	Height(mm)	5.10	5.50	6.00				
		15	Height(mm)	6.10	6.50	7.00				
		30	Height(mm)	7.60	8.00	8.50				
		45	Height(mm)	9.80	10.20	10.70				
		0	Voltage(V)	166.08	168.83	169.58				
		15	Voltage(V)	168.95	171.95	172.95				
		30	Voltage(V)	177.20	180.20	181.20				
		45	Voltage(V)	188.93	192.43	193.93				
	0	Speed(mm/min)	2200	1500	1200					
	15	Speed(mm/min)	2046	1395	1116					
	30	Speed(mm/min)	1474	967.5	744					
	45	Speed(mm/min)	1100	637.5	420					
	Top	Top	0	Kerf(mm)	3.50	4.00	3.60			 
			15	Kerf(mm)	4.40	4.85	4.40			
			30	Kerf(mm)	4.70	5.55	5.50			
			45	Kerf(mm)	4.70	7.10	8.60			
			0	Angle	0	0	0			
			15	Angle	15	14.5	14			
			30	Angle	30.3	29.65	29			
			45	Angle	46	45	44			
0			Height(mm)	5.10	5.50	6.00				
15			Height(mm)	6.10	6.50	7.00				
30			Height(mm)	7.60	8.00	8.50				
45			Height(mm)	9.80	10.20	10.70				
0			Voltage(V)	166.08	168.83	169.58				
15			Voltage(V)	166.60	170.25	171.90				
30			Voltage(V)	175.05	179.05	181.05				
45			Voltage(V)	187.43	191.21	192.98				
0	Speed(mm/min)	2200	1500	1200						
15	Speed(mm/min)	2046	1395	1116						
30	Speed(mm/min)	1474	967.5	744						
45	Speed(mm/min)	1100	675	480						

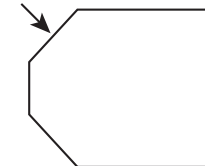
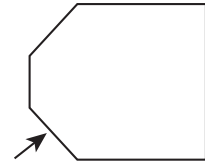
### 300 Amp Bevel Parameters

K Bevel

Parameters shown are using 4-5 mm landing with equal top and bottom bevel.

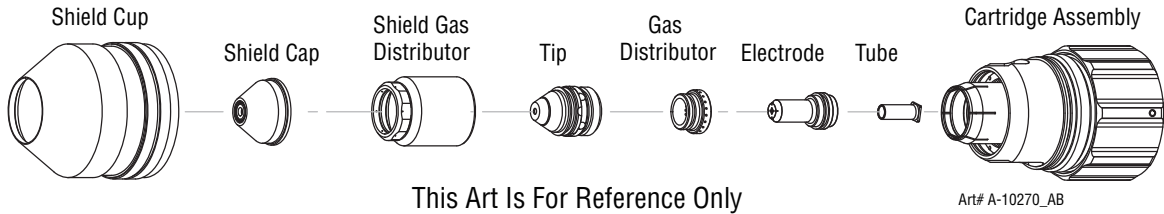
<b>20</b>	<b>25</b>	<b>30</b>			Material Thickness(mm)
10744	10745	10746			Process ID
300	300	300			Standard Cut Current(A)
3.5	4.0	3.6			Standard Kerf(mm)
5.1	5.5	6.0			Standard Cut Height(mm)
165	168	169			Standard Arc Voltage(V)
2200	1500	1200			Standard Speed(mm/min)

Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data					
K	ALL	ALL	Current(A)	300	300	300		
		0	Kerf(mm)	3.50	4.00	3.60		
		15	Kerf(mm)	4.60	5.15	4.80		
		30	Kerf(mm)	6.20	6.70	6.30		
		45	Kerf(mm)	8.50	9.00	8.60		
		0	Angle	0	0	0		
		15	Angle	15	15	15		
		30	Angle	31	30.5	30		
		45	Angle	46.5	45.75	45		
		0	Height(mm)	5.10	5.50	6.00		
		15	Height(mm)	6.10	6.50	7.00		
		30	Height(mm)	7.60	8.00	8.50		
		45	Height(mm)	9.80	10.20	10.70		
		0	Voltage(V)	166.08	168.83	169.58		
		15	Voltage(V)	168.95	171.95	172.95		
		30	Voltage(V)	177.20	180.20	181.20		
		45	Voltage(V)	188.93	192.43	193.93		
		0	Speed(mm/min)	2200	1500	1200		
		15	Speed(mm/min)	2046	1395	1116		
		30	Speed(mm/min)	1474	967.5	744		
45	Speed(mm/min)	1100	637.5	420				
K Bevel	Bottom	0	Kerf(mm)	3.50	4.00	3.60		
		15	Kerf(mm)	4.40	4.85	4.40		
		30	Kerf(mm)	4.70	5.55	5.50		
		45	Kerf(mm)	4.70	7.10	8.60		
		0	Angle	0	0	0		
		15	Angle	15	14.5	14		
		30	Angle	30.3	29.65	29		
		45	Angle	46	45	44		
		0	Height(mm)	5.10	5.50	6.00		
		15	Height(mm)	6.10	6.50	7.00		
		30	Height(mm)	7.60	8.00	8.50		
		45	Height(mm)	9.80	10.20	10.70		
		0	Voltage(V)	166.08	168.83	169.58		
		15	Voltage(V)	166.60	170.25	171.90		
		30	Voltage(V)	175.05	179.05	181.05		
		45	Voltage(V)	187.43	191.21	192.98		
		0	Speed(mm/min)	2200	1500	1200		
		15	Speed(mm/min)	2046	1395	1116		
		30	Speed(mm/min)	1474	967.5	744		
		45	Speed(mm/min)	1100	675	480		
K Bevel	Top	0	Kerf(mm)	3.50	4.00	3.60		
		15	Kerf(mm)	4.40	4.85	4.40		
		30	Kerf(mm)	4.70	5.55	5.50		
		45	Kerf(mm)	4.70	7.10	8.60		
		0	Angle	0	0	0		
		15	Angle	15	14.5	14		
		30	Angle	30.3	29.65	29		
		45	Angle	46	45	44		
		0	Height(mm)	5.10	5.50	6.00		
		15	Height(mm)	6.10	6.50	7.00		
		30	Height(mm)	7.60	8.00	8.50		
		45	Height(mm)	9.80	10.20	10.70		
		0	Voltage(V)	166.08	168.83	169.58		
		15	Voltage(V)	166.60	170.25	171.90		
		30	Voltage(V)	175.05	179.05	181.05		
		45	Voltage(V)	187.43	191.21	192.98		
		0	Speed(mm/min)	2200	1500	1200		
		15	Speed(mm/min)	2046	1395	1116		
		30	Speed(mm/min)	1474	967.5	744		
		45	Speed(mm/min)	1100	675	480		

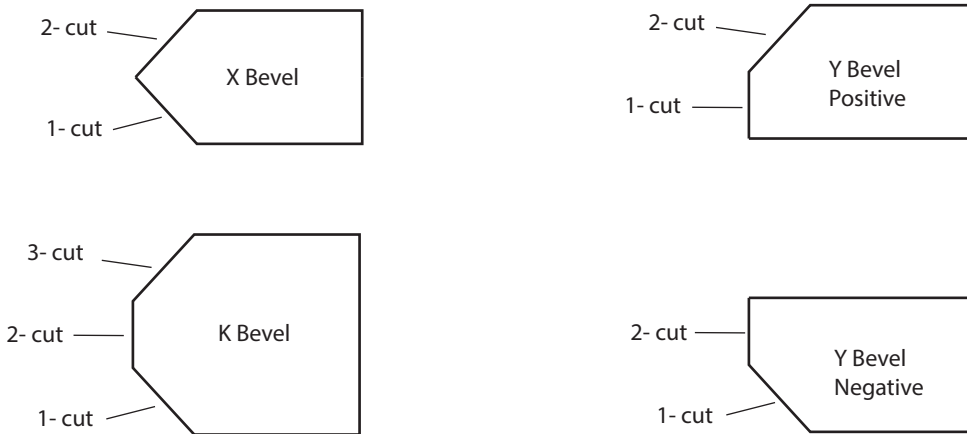


# 400 Amp Bevel

## 400 Amp Bevel Parts






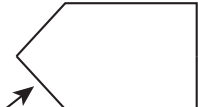

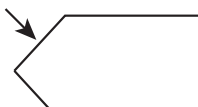
22-1305	22-1304	22-1310	22-1309	22-1042	22-1308	9-7921	22-1300
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Art #

Effective Material Thickness	Min. Clearance	Pre Flow Pressure (Air)	GCM-2010			
			Cut Flow Rates / Pressures			
			Plasma (O <sub>2</sub> )		Shield (Air)	
(mm)	(mm)	(Bar)	Ball	(Bar)	Ball	(Bar)
20	2.0	1.0	80	6.2	Set Shield Gas switch to "Pressure"	5.5
25	2.0	1.0	80	6.2		5.5
30	2.0	1.0	80	6.2		5.5
35	2.0	1.0	80	6.2		5.5
40	2.0	1.0	80	6.2		5.5
50	2.0	1.0	80	6.2		5.5

400 Amp Bevel Parameters				20	25	30	35	40	50	Material Thickness(mm)
Straight &V Bevel				10650	10649	10650	10651	10652	10653	Process ID
				400	400	400	400	400	400	Standard Cut Current(A)
				3.0	3.3	5.3	5.5	5.7	5.7	Standard Kerf(mm)
				5.0	6.0	5.1	5.1	5.5	8.0	Standard Cut Height(mm)
				157	163	162	164	165	175	Standard Arc Voltage(V)
				2500	1900	1600	1300	1000	600	Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
Straight &V	ALL	ALL	Current(A)	400	400	400	400	400	400	
I&V Bevel	Bottom	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70	
		15	Kerf(mm)	4.50	4.90	7.00	6.90	6.80	6.80	
		30	Kerf(mm)	6.70	7.05	9.10	9.10	9.10	9.20	
		45	Kerf(mm)	10.00	10.55	12.80	13.05	13.30	13.40	
		0	Angle	2	1.8	1.5	1.5	1.5	0	
		15	Angle	17	16.5	16	16	16	16	
		30	Angle	33	33.3	33.5	32.5	31.5	31.5	
		45	Angle	48	47	46	46	46	46	
		0	Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00	
		15	Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00	
		30	Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00	
		45	Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00	
		0	Voltage(V)	158.08	164.02	162.97	164.97	165.97	175.97	
		15	Voltage(V)	160.95	166.79	165.63	167.63	168.63	181.63	
		30	Voltage(V)	169.20	174.95	173.70	175.70	176.70	190.70	
		45	Voltage(V)	180.93	186.03	184.13	186.13	187.13	202.13	
	0	Speed(mm/min)	2500	1900	1600	1300	1000	600		
	15	Speed(mm/min)	2325	1767	1488	1209	930	558		
	30	Speed(mm/min)	1675	1225.5	992	825.5	650	390		
	45	Speed(mm/min)	1250	855	640	487.5	350	210		
	Top	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70	
		15	Kerf(mm)	2.00	2.80	5.30	5.10	4.90	4.90	
		30	Kerf(mm)	1.70	2.65	5.30	5.00	4.70	4.70	
		45	Kerf(mm)	1.10	2.95	6.50	6.85	7.20	7.20	
		0	Angle	2	1.8	1.5	1.5	1.5	0	
		15	Angle	15	14.5	14	14.5	15	15	
		30	Angle	30.3	30	29.6	30	30.5	30.5	
		45	Angle	46	45.5	45	45	45	45	
0		Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00		
15		Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00		
30		Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00		
45		Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00		
0	Voltage(V)	158.08	164.02	162.97	164.97	165.97	175.97			
15	Voltage(V)	158.60	164.49	163.38	165.98	167.58	181.58			
30	Voltage(V)	167.05	171.92	169.78	173.23	175.68	190.68			
45	Voltage(V)	179.43	183.00	179.57	183.31	186.05	202.05			
0	Speed(mm/min)	2500	1900	1600	1300	1000	600			
15	Speed(mm/min)	2325	1767	1488	1209	930	558			
30	Speed(mm/min)	1675	1273	1072	871	670	402			
45	Speed(mm/min)	1250	950	800	650	500	300			

400 Amp Bevel Parameters				20	25	30	35	40	50	Material Thickness(mm)
Y&X Bevel				10650	10649	10650	10651	10652	10653	Process ID
Parameters shown are for 50/50% thickness bottom and top bevel				400	400	400	400	400	400	Standard Cut Current(A)
				3.0	3.3	5.3	5.5	5.7	5.7	Standard Kerf(mm)
				5.0	6.0	5.1	5.1	5.5	8.0	Standard Cut Height(mm)
				157	163	162	164	165	175	Standard Arc Voltage(V)
				2500	1900	1600	1300	1000	600	Standard Speed(mm/min)
Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data							
Y&X	ALL	ALL	Current(A)	400	400	400	400	400	400	
Y&X Bevel	Bottom	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70	 
		15	Kerf(mm)	4.50	4.90	7.00	6.90	6.80	6.80	
		30	Kerf(mm)	4.70	5.05	7.10	7.35	7.60	8.20	
		45	Kerf(mm)	5.50	6.05	8.30	8.60	8.90	9.40	
		0	Angle	2	1.75	1.5	1.5	1.5	0	
		15	Angle	17	16.5	16	16	16	16	
		30	Angle	33	33.25	33.5	32.5	31.5	31.5	
		45	Angle	48	47	46	46	46	46	
		0	Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00	
		15	Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00	
		30	Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00	
		45	Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00	
		0	Voltage(V)	158.08	164.03	162.97	164.97	165.97	175.97	
		15	Voltage(V)	160.95	166.79	165.63	167.63	168.63	181.63	
		30	Voltage(V)	169.20	174.95	173.70	175.70	176.70	190.70	
		45	Voltage(V)	180.93	186.03	184.13	186.13	187.13	202.13	
	0	Speed(mm/min)	2500	1900	1600	1300	1000	600		
	15	Speed(mm/min)	2325	1767	1488	1209	930	558		
	30	Speed(mm/min)	1675	1225.5	992	825.5	650	390		
	45	Speed(mm/min)	1250	855	640	487.5	350	210		
	Top	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70	 
		15	Kerf(mm)	2.00	2.80	5.30	5.10	4.90	4.90	
		30	Kerf(mm)	1.70	2.65	5.30	5.00	4.70	2.70	
		45	Kerf(mm)	1.10	2.95	6.50	6.85	7.20	4.20	
		0	Angle	2	1.75	1.5	1.5	1.5	0	
		15	Angle	15	14.5	14	14.5	15	15	
		30	Angle	30.3	29.95	29.6	30.05	30.5	30.5	
		45	Angle	46	45.5	45	45	45	45	
0		Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00		
15		Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00		
30		Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00		
45		Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00		
0		Voltage(V)	158.08	164.03	162.97	164.97	165.97	175.97		
15		Voltage(V)	158.60	164.49	163.38	165.98	167.58	181.58		
30		Voltage(V)	167.05	171.92	169.78	173.23	175.68	190.68		
45		Voltage(V)	179.43	183.00	179.57	183.31	186.05	202.05		
0	Speed(mm/min)	2500	1900	1600	1300	1000	600			
15	Speed(mm/min)	2325	1767	1488	1209	930	558			
30	Speed(mm/min)	1675	1273	1072	871	670	402			
45	Speed(mm/min)	1250	950	800	650	500	300			

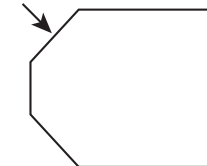
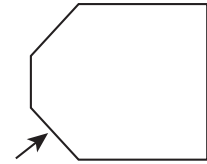
### 400 Amp Bevel Parameters

K Bevel

Parameters shown are using 4-5 mm landing with equal top and bottom bevel.

	20	25	30	35	40	50	Material Thickness(mm)
	10650	10649	10650	10651	10652	10653	Process ID
	400	400	400	400	400	400	Standard Cut Current(A)
	3.0	3.3	5.3	5.5	5.7	5.7	Standard Kerf(mm)
	5.0	6.0	5.1	5.1	5.5	8.0	Standard Cut Height(mm)
	157	163	162	164	165	175	Standard Arc Voltage(V)
	2500	1900	1600	1300	1000	600	Standard Speed(mm/min)

Bevel Type	Top/Bottom Bevel	Bevel Angle	Bevel Data						
K	ALL	ALL	Current(A)	400	400	400	400	400	400
K Bevel	Bottom	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70
		15	Kerf(mm)	4.50	4.90	7.00	6.90	6.80	6.80
		30	Kerf(mm)	6.70	7.05	9.10	9.10	9.10	9.20
		45	Kerf(mm)	10.00	10.55	12.80	13.05	13.30	13.40
		0	Angle	2	1.75	1.5	1.5	1.5	0
		15	Angle	17	16.5	16	16	16	16
		30	Angle	33	33.25	33.5	32.5	31.5	31.5
		45	Angle	48	47	46	46	46	46
		0	Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00
		15	Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00
		30	Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00
		45	Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00
		0	Voltage(V)	158.08	164.03	162.97	164.97	165.97	175.97
		15	Voltage(V)	160.95	166.79	165.63	167.63	168.63	181.63
		30	Voltage(V)	169.20	174.95	173.70	175.70	176.70	190.70
		45	Voltage(V)	180.93	186.03	184.13	186.13	187.13	202.13
	0	Speed(mm/min)	2500	1900	1600	1300	1000	600	
	15	Speed(mm/min)	2325	1767	1488	1209	930	558	
	30	Speed(mm/min)	1675	1225.5	992	825.5	650	390	
	45	Speed(mm/min)	1250	855	640	487.5	350	210	
	Top	0	Kerf(mm)	3.00	3.30	5.30	5.50	5.70	5.70
		15	Kerf(mm)	2.00	2.80	5.30	5.10	4.90	4.90
		30	Kerf(mm)	1.70	2.65	5.30	5.00	4.70	4.70
		45	Kerf(mm)	1.10	2.95	6.50	6.85	7.20	7.20
		0	Angle	2	1.75	1.5	1.5	1.5	0
		15	Angle	15	14.5	14	14.5	15	15
		30	Angle	30.3	29.95	29.6	30.05	30.5	30.5
		45	Angle	46	45.5	45	45	45	45
		0	Height(mm)	5.00	6.00	5.10	5.10	5.50	8.00
		15	Height(mm)	6.00	6.50	5.10	5.10	5.50	9.00
		30	Height(mm)	7.00	7.50	6.10	6.60	7.50	11.00
		45	Height(mm)	9.00	9.50	8.10	8.60	9.50	14.00
0		Voltage(V)	158.08	164.03	162.97	164.97	165.97	175.97	
15		Voltage(V)	158.60	164.49	163.38	165.98	167.58	181.58	
30		Voltage(V)	167.05	171.92	169.78	173.23	175.68	190.68	
45		Voltage(V)	179.43	183.00	179.57	183.31	186.05	202.05	
0	Speed(mm/min)	2500	1900	1600	1300	1000	600		
15	Speed(mm/min)	2325	1767	1488	1209	930	558		
30	Speed(mm/min)	1675	1273	1072	871	670	402		
45	Speed(mm/min)	1250	950	800	650	500	300		



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