

Cut chart screen

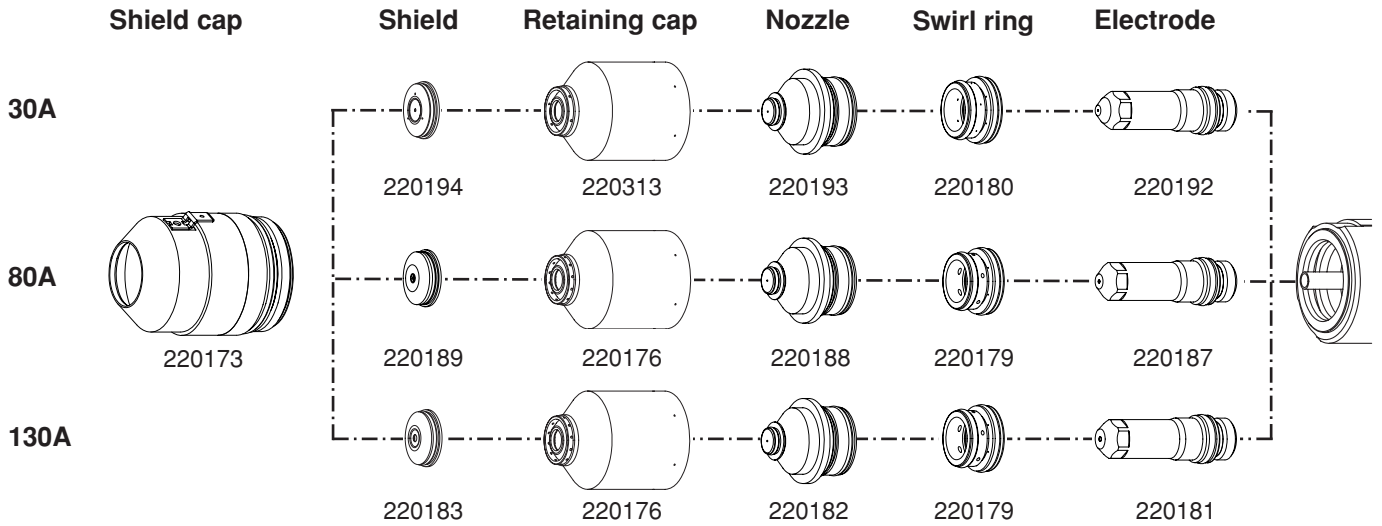
Plasma 1 Cut Chart - Rev A		Plasma		Shield			
		Auto	Manual	Auto	Manual		
HPR - Process Selection		Preflow Setting	<input type="text" value="32"/>	<input type="text" value="35"/>	<input type="text" value="38"/>	<input type="text" value="40"/>	%
Material Type <input type="text" value="Mild Steel"/>		Cutflow Setting	<input type="text" value="84"/>	<input type="text" value="80"/>	<input type="text" value="32"/>	<input type="text" value="35"/>	%
Process Current <input type="text" value="130A"/>		Gas 1	<input type="text" value="0"/>	Gas 2	<input type="text" value="0"/>	%	
Plasma / Shield <input type="text" value="O2 / Air"/>		Mixed Gas	<input type="text" value="0"/>	<input type="text" value="0"/>	%		
Material Thickness <input type="text" value="0.135"/>		Cut Speed	<input type="text" value="240"/>	ipm			
		Kerf	<input type="text" value="0"/>	in			
		Set Arc Current	<input type="text" value="130"/>	amps			
		Set Arc Voltage	<input type="text" value="124"/>	volts			
		Cut Height	<input type="text" value="0.1"/>	in			
		Pierce Height	<input type="text" value="200"/>	%	<input type="text" value="0.2"/>	in	
		Pierce Time	<input type="text" value="0.1"/>	sec			
		Creep Time	<input type="text" value="0"/>	sec			

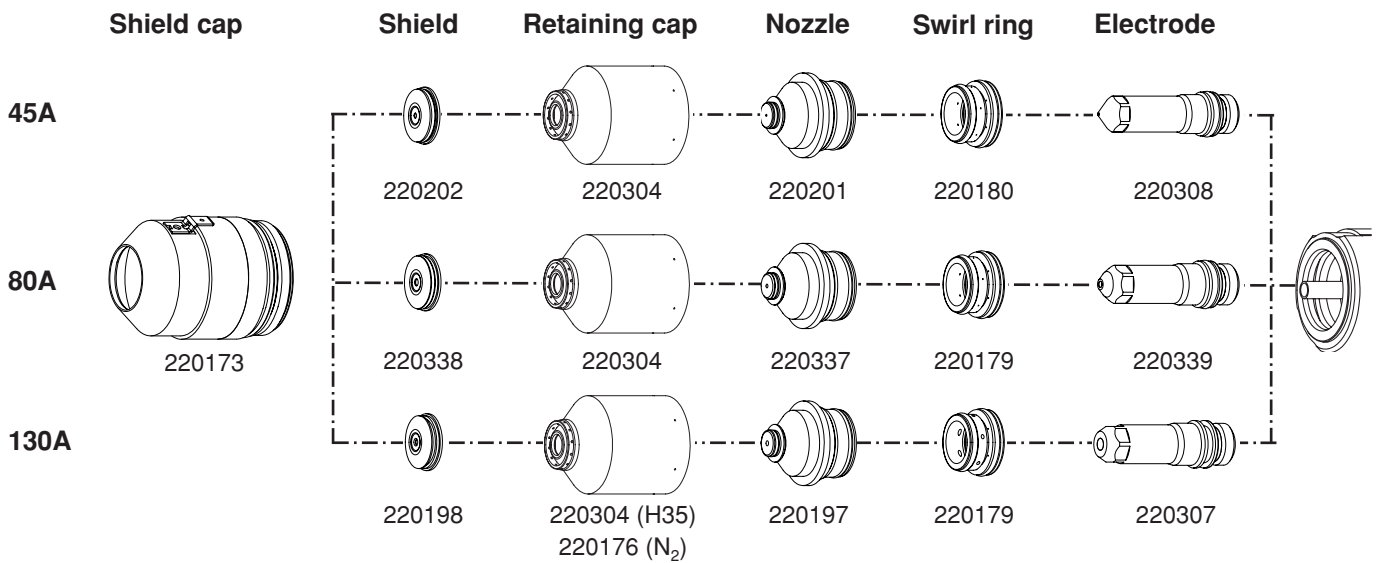
Save Process	Reset Process	Save Database	Load Database	Change Consumables	Done
--------------	---------------	---------------	---------------	--------------------	------

## Consumable selection

### Mild steel

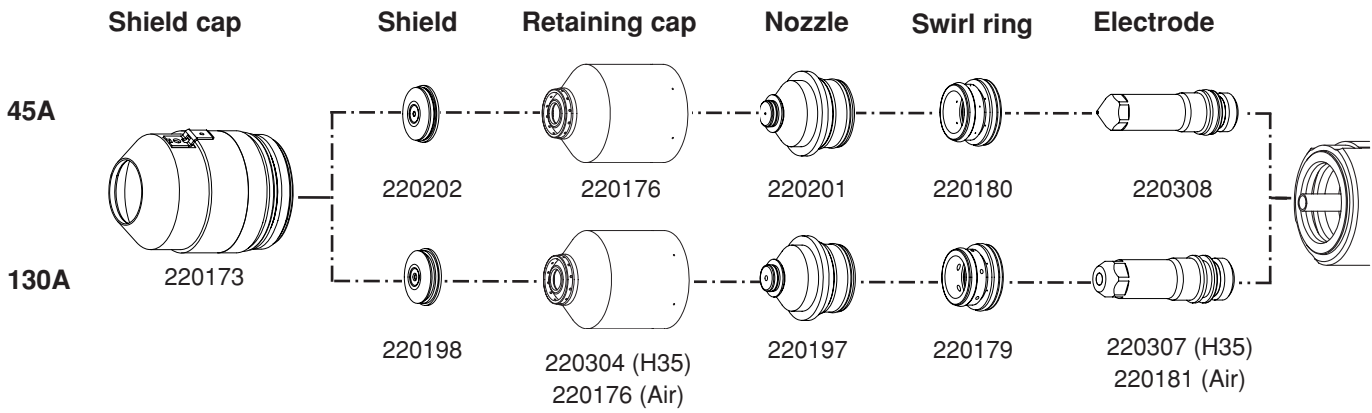


### Stainless steel

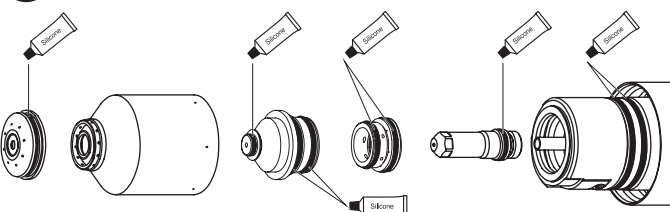
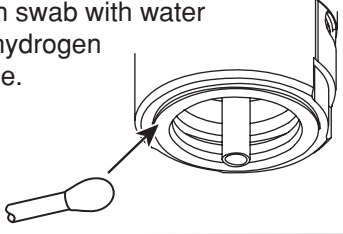
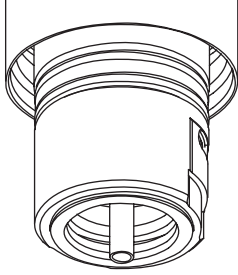
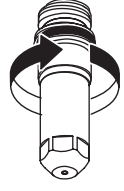

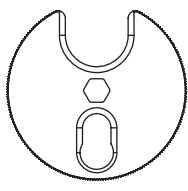

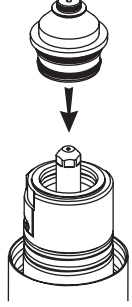
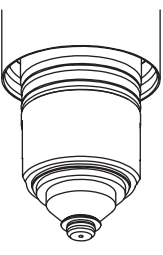
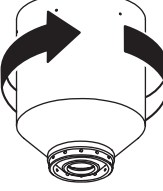

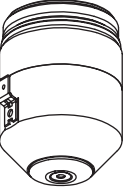
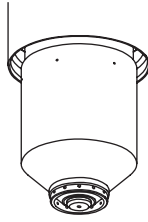
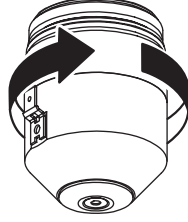


Consumable selection (continued)

Aluminum



### Install consumables

<p><b>1</b> Apply a thin film of silicone grease on all o-rings.</p> 		<p><b>2</b> Clean current ring using a cotton swab with water or 3% hydrogen peroxide.</p> 	
<p><b>! Do not overtighten parts! Only tighten until mating parts are seated.</b></p>			
<p><b>3</b> Install electrode</p>     <p>Tool part number 104119</p>	<p><b>4</b> Insert swirl ring</p> 	<p><b>5</b> Install nozzle and swirl ring</p> 	
<p><b>6</b> Install inner retaining cap</p>  	<p><b>7</b> Insert shield</p>  	<p><b>8</b> Install retaining cap</p>  	

### Cut charts

The following *Cut charts* show the consumable parts, cutting speeds and the gas and torch settings required for each process.

The numbers shown in the *Cut charts* are recommended to provide high-quality cuts with minimal dross. Because of differences between installations and material composition, adjustments may be required to obtain desired results.

### Marking

Any of the consumable sets can also be used for marking. Marking parameters are shown at the bottom of each cut chart. The quality of the markings will vary depending on the cut process, material type, and material thickness combination. Marking is not possible for every combination (very thin materials). Poor quality marking or burn-through may occur with material less than 1.5 mm (0.060" or 16 gauge).

**Estimated kerf width compensation**

The widths in the chart below are for reference. Differences between installations and material composition may cause actual results to vary from those shown in the table.

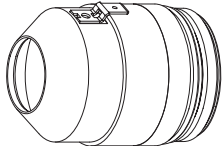
<b>Metric</b>							
	<b>Thickness (mm)</b>						
<b>Process</b>	<b>1.5</b>	<b>3</b>	<b>6</b>	<b>10</b>	<b>12</b>	<b>20</b>	<b>25</b>
<b>Mild steel</b>							
130A O <sub>2</sub> -Air			1.803	2.032	2.108	2.642	3.429
80A O <sub>2</sub> -Air		1.372	1.727	1.905			
30A O <sub>2</sub> -O <sub>2</sub>	1.346	1.448					
<b>Stainless steel</b>							
130A H35-N <sub>2</sub>				2.718	2.769	2.896	
130A N <sub>2</sub> -N <sub>2</sub>			1.829	1.879	2.413		
80A F5-N <sub>2</sub>			1.194				
45A F5-N <sub>2</sub>	0.584	0.381	0.533				
45A N <sub>2</sub> -N <sub>2</sub>	0.483	0.229	0.152				
<b>Aluminum</b>							
130A H35-N <sub>2</sub>				2.718	2.769	2.896	
130A Air-Air			2.083	2.083	2.184		
45A Air-Air	1.067	1.092	1.245				
<b>English</b>							
	<b>Thickness (in)</b>						
<b>Process</b>	<b>0.060</b>	<b>0.135</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>3/4</b>	<b>1</b>
<b>Mild steel</b>							
130A O <sub>2</sub> -Air			0.071	0.08	0.083	0.104	0.135
80A O <sub>2</sub> -Air		0.054	0.068	0.075			
30A O <sub>2</sub> -O <sub>2</sub>	0.053	0.057					
<b>Stainless steel</b>							
130A H35-N <sub>2</sub>				0.107	0.109	0.114	
130A N <sub>2</sub> -N <sub>2</sub>			0.072	0.074	0.095		
80A F5-N <sub>2</sub>			0.047				
45A F5-N <sub>2</sub>	0.023	0.015	0.021				
45A N <sub>2</sub> -N <sub>2</sub>	0.019	0.009	0.006				
<b>Aluminum</b>							
130A H35-N <sub>2</sub>				0.107	0.109	0.114	
130A Air-Air			0.082	0.082	0.086		
45A Air-Air	0.042	0.043	0.049				

# OPERATION

## Mild steel O<sub>2</sub> Plasma / O<sub>2</sub> Shield 30 A Cutting

Flow Rates – lpm/scfh		
	O <sub>2</sub>	Air
Preflow	0 / 0	46 / 97
Cutflow	22 / 46	0/0

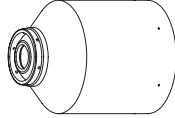
Note: Air must be connected to use this process. It is used as the preflow gas



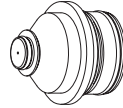
220173



220194



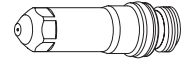
220313



220193



220180



220192

### Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time				
Plasma	Shield	Plasma	Shield	Plasma	Shield	mm	Volts	mm	mm/m	mm	factor %	seconds				
O <sub>2</sub>	O <sub>2</sub>	78	17	94	17	0.5	114	1.3	5355	2.3	180	0.1				
						0.8	115		4225			0.2				
						1.0	116		3615			0.3				
						1.2	117		2865							
						1.5	119		2210							
						2	120		1490							
		35	7	7	7	2.5	122	1.5	1325	2.7	180	0.4				
						3*	123		1160			0.5				
						4*	125		905			0.7				
						75	7		7			7	6*	128	665	1.0

### English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time				
Plasma	Shield	Plasma	Shield	Plasma	Shield	in	Volts	in	ipm	in	factor %	seconds				
O <sub>2</sub>	O <sub>2</sub>	78	17	94	17	.018	114	0.050	215	0.09	180	0.1				
						.024			200			0.2				
						.030			115			170	0.3			
						.036			116			155				
						.048			117			110				
						.060			119			85				
		35	7	7	7	.075	120	0.060	60	0.11	180	0.4				
						.105	122		50							
						.135*	123		40			0.5				
						75	7		7			7	3/16*	128	30	0.7
													1/4*		25	1.0

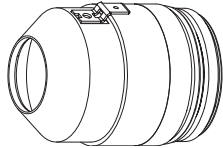
### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma	Shield	Plasma	Shield	Plasma	Shield	Amps	mm	in	mm/min	ipm	Volts
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

\*Pierce complete is recommended for these thicknesses

**Mild steel**  
**O<sub>2</sub> Plasma / Air Shield**  
**80 A Cutting**

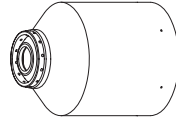
Flow Rates – lpm/scfh		
	O <sub>2</sub>	Air
Preflow	0 / 0	76 / 161
Cutflow	23 / 48	41 / 87



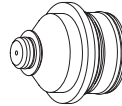
220173



220189



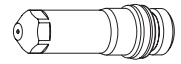
220176



220188



220179



220187

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
O <sub>2</sub>	Air	48	27	78	27	2	112	2.5	9810	3.8	150	0.1
						2.5	115		7980			
						3	117		6145			
						4	120	2.0	4300	4	200	0.2
						6	123		3045			
						10	127		1810			
					12	130	1410					
					15	133	1030	5.0	250	0.8		
					20	135	545	6.3			0.9	

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
O <sub>2</sub>	Air	48	27	78	27	.075	112	.100	400	.150	150	0.1
						.105	115		290			
						.135	117		180			
						3/16	120	.08	155	.160	200	0.2
						1/4	123		110			
						3/8	127		75			
					1/2	130	50					
					15	133	37	.200	250	0.8		
					3/4	135	25	0.250			0.9	

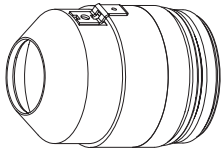
**Marking**

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma	Shield	Plasma	Shield	Plasma	Shield		Amps	mm	in	mm/min	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

# OPERATION

## Mild steel O<sub>2</sub> Plasma / Air Shield 130 A Cutting

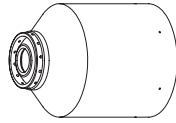
Flow Rates – lpm/scfh		
	O <sub>2</sub>	Air
Preflow	0 / 0	102 / 215
Cutflow	33 / 70	45 / 96



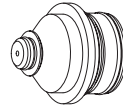
220173



220183



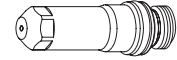
220176



220182



220179



220181

### Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	mm	Volts	mm	mm/m	mm	factor %	seconds
O <sub>2</sub>	Air	32	38	84	32	3	124	2.5	6505	5.0	200	0.1
						4	126	2.8	5550	5.6		0.2
						6	127		4035	0.3		
					27	10	130	3.0	2680	6.0		0.5
						12	132	3.3	2200	6.6		0.7
						15	135	3.8	1665	7.6		1
			20		138	1050	190		1.8			
			25		141	4.0		550	N/A			
			32		160	4.5	375					
			38		167		255					

### English

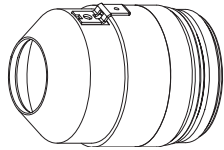
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	in	Volts	in	ipm	in	factor %	seconds
O <sub>2</sub>	Air	32	38	84	32	.135	124	.100	240	.200	200	0.1
						3/16	126	.110	190	.220		0.2
						1/4	127		150	0.3		
					27	3/8	130	.120	110	.240		0.5
						1/2	132	.130	80	.260		0.7
						5/8	135	.150	60	.300		1
			3/4		138	45	190		1.8			
			1.0		141	.160		20	N/A			
			1-1/4		160	.180	15					
			1-1/2		167		10					

### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
						Amps	mm	in	mm/min	ipm	Volts
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

**Stainless steel**  
**N<sub>2</sub> Plasma / N<sub>2</sub> Shield**  
**45 A Cutting**

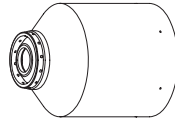
Flow Rates – lpm/scfh	
N <sub>2</sub>	
Preflow	24 / 51
Cutflow	75 / 159



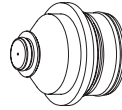
220173



220202



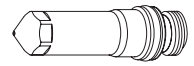
220304



220201



220180



220308

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
N <sub>2</sub>	N <sub>2</sub>	35	5	62	55	0.8	94	2.5	6380	3.8	150	0.0
						1.0			5880			0.1
						1.2			5380			0.2
						1.5	4630					
						2.0	3935					
						2.5	3270					
						3.0	2550					
						4.0	1580		0.3			

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
N <sub>2</sub>	N <sub>2</sub>	35	5	62	55	.036	94	.100	240	.150	150	0.0
						.048			210			0.1
						.060	95		180			0.2
						.075	97		160			
						.105	101		120			
						.135	103		75			

**Marking**

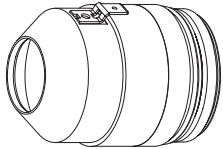
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma	Shield	Plasma	Shield	Plasma	Shield		Amps	mm	in	mm/min	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

Note: This process produces a darker cut edge than the 45A, F5/N<sub>2</sub> stainless steel process

# OPERATION

## Stainless steel F5 Plasma / N<sub>2</sub> Shield 45 A Cutting

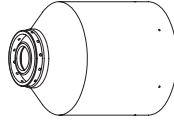
Flow Rates – lpm/scfh		
	F5	N <sub>2</sub>
Preflow	0 / 0	43 / 91
Cutflow	8 / 17	65 / 138



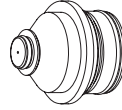
220173



220202



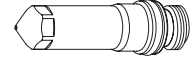
220304



220201



220180



220308

### Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
F5	N <sub>2</sub>	35	25	62	55	0.8	99	2.5	6570	3.8	150	0.2
						1.0						
						1.2						
						1.5						
						2.0						
						2.5						
						3.0						
					4.0							
				15	6.0	110	2.0	845		190	0.5	

### English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
F5	N <sub>2</sub>	35	25	62	55	.036	99	.100	240	.150	150	0.2
						.048						
						.060						
						.075						
						.105						
						.135						
						3/16						
									15	1/4	110	.080
								30			0.5	

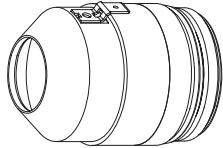
### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
							mm	in	mm/min	ipm	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

Note: This process produces a shinier cut edge than the 45A, N<sub>2</sub>/N<sub>2</sub> stainless steel process

**Stainless steel**  
**F5 Plasma / N<sub>2</sub> Shield**  
**80 A Cutting**

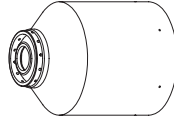
Flow Rates – lpm/scfh		
	F5	N <sub>2</sub>
Preflow	0 / 0	67 / 142
Cutflow	31 / 65	55 / 116



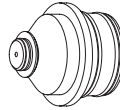
220173



220338



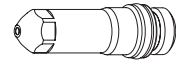
220304



220337



220179



220339

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
F5	N <sub>2</sub>	33	27	65	42	4	108	3.0	2180	4.5	150	0.2
						6	112	2.5	1225	3.8		0.3
						10	120	3.0	560	4.5		0.5

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
F5	N <sub>2</sub>	33	27	65	42	.135	108	.120	105	.180	150	0.2
						3/16	110	.110	60	.170		0.3
						1/4	112	.100	45	.150		0.5
						3/8	120	.120	25	.180		

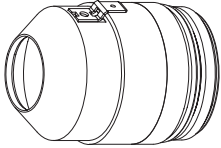
**Marking**

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10		Amps	mm	in	mm/min	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

# OPERATION

## Stainless steel N<sub>2</sub> Plasma / N<sub>2</sub> Shield 130 A Cutting

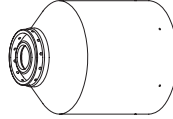
Flow Rates – lpm/scfh	
N <sub>2</sub>	
Preflow	97 / 205
Cutflow	79 / 168



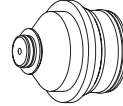
220173



220198



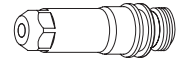
220176



220197



220179



220307

### Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
N <sub>2</sub>	N <sub>2</sub>	19	60	75	27	6	153	3.0	1960	6	200	0.3
						10	156		1300			0.5
						12	162	3.5	900	7		0.8
						15	167	3.8	670	N/A		
						20	176	4.3	305	N/A		

### English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
N <sub>2</sub>	N <sub>2</sub>	19	60	75	27	1/4	153	0.120	75	0.24	200	0.3
						3/8	156		55			0.5
						1/2	162	0.140	30	0.28		0.8
						5/8	167	0.150	25	N/A		
						3/4	176	0.170	15	N/A		

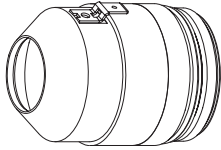
### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage Amps	Torch-to-Work Distance		Marking Speed		Arc Voltage Volts
Plasma	Shield	Plasma	Shield	Plasma	Shield		mm	in	mm/min	ipm	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a rougher, darker cut edge with more dross and less cut angle variation than the 130A, H35/N<sub>2</sub> process

**Stainless steel**  
**H35 Plasma / N<sub>2</sub> Shield**  
**130 A Cutting**

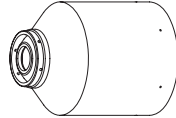
Flow Rates – lpm/scfh		
	H35	N <sub>2</sub>
Preflow	0 / 0	76 / 160
Cutflow	26 / 54	68 / 144



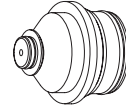
220173



220198



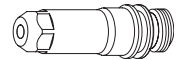
220304



220197



220179



220307

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	mm	Volts	mm	mm/m	mm	factor %	seconds
H35	N <sub>2</sub>	19	38	75	54	10	154	4.5	980	7.7	170	0.3
					42	12	158		820			0.5
					27	15	162		580			0.8
					20	20	165		360			1.3
					20	25	172		260			N/A

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	in	Volts	in	ipm	in	factor %	seconds
H35	N <sub>2</sub>	19	38	75	54	3/8	154	0.180	40	0.31	170	0.3
					42	1/2	158		30			0.5
					27	5/8	162		20			0.8
					20	3/4	165		15			1.3
					20	1	172		10			N/A

**Marking**

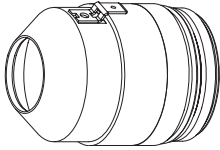
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
						Amps	mm	in	mm/min	ipm	Volts
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a smoother, shinier cut edge with less dross and greater cut angle variation than the 130A, N<sub>2</sub>/N<sub>2</sub> process

## OPERATION

### Stainless steel H35 and N<sub>2</sub> Plasma / N<sub>2</sub> Shield 130 A Cutting

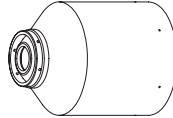
Flow Rates – lpm/scfh		
	H35	N <sub>2</sub>
Preflow	0 / 0	97 / 205
Cutflow	13 / 28	71 / 150



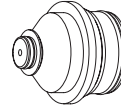
220173



220198



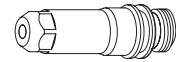
220304



220197



220179



220307

### Metric

Select Gases		Set Preflow		Set Cutflow				Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	Mix Gas 1	Mix Gas 2					mm	Volts	
H35	N <sub>2</sub>	19	60	75	38	32	18	6	150	3.0	1835	6.0	200	0.3
					10			153	1195		0.3			
					12			160	3.5	875	7.0	0.5		
					15			168	3.8	670	7.6	0.8		
					20			176	4.3	305	7.7	180		1.3

### English

Select Gases		Set Preflow		Set Cutflow				Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	Mix Gas 1	Mix Gas 2					in	Volts	
H35	N <sub>2</sub>	19	60	75	38	32	18	1/4	150	.120	70	0.20	200	0.3
					3/8			153	50		0.3			
					1/2			160	0.140	30	0.30	0.5		
					5/8			168	0.150	25	0.30	0.8		
					3/4			176	0.170	15	0.31	180		1.3

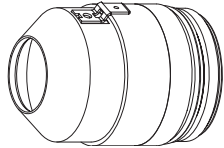
### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
							mm	in	mm/min	ipm	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a smoother, shinier cut edge with less dross and greater cut angle variation than the 130A, N<sub>2</sub>/N<sub>2</sub> process. Edge color is more silver than the H35/N<sub>2</sub> process.

**Aluminum**  
Air Plasma / Air Shield  
45 A Cutting

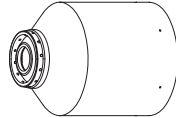
Flow Rates – lpm/scfh	
Air	
Preflow	45 / 95
Cutflow	78 / 165



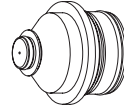
220173



220202



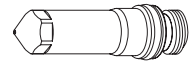
220176



220201



220180



220308

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
Air	Air	35	25	62	55	1.2	130	2.5	5670	3.8	150	0.2
						1.5	115		4420			
						2.0	113		4000			
						2.5	110		3665			
						3.0	107		3225			
					38	4.0	102	1.8	2575	2.7	0.3	
						6.0	117	3.0	1690	4.5	0.6	

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
Air	Air	35	25	62	55	.048	130	0.100	220	0.15	150	0.2
						.060	115		170			
						.075	113		160			
						.105	110		140			
						.135	102		0.070			
					38	3/16	114	0.120	90	0.18	0.4	
						1/4	117	0.120	60	0.18	0.6	

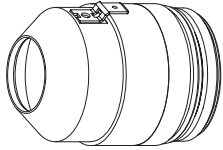
**Marking**

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
							mm	in	mm/min	ipm	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	15	2.5	0.100	6350	250	135

# OPERATION

## Aluminum Air Plasma / Air Shield 130 A Cutting

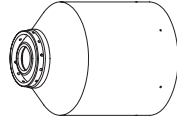
Flow Rates – lpm/scfh	
Air	
Preflow	73 / 154
Cutflow	78 / 165



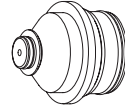
220173



220198



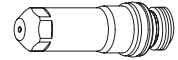
220176



220197



220179



220181

### Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					mm	Volts	
Air	Air	19	38	75	27	6	153	2.8	2370	5.6	200	0.2
						10	154	3.0	1465	6		0.3
						12	156		1225	6.6		0.5
						15	158	3.3	1050	7		0.8
						20	162	3.5	725			1.3
						25	172	4.0	525		N/A	

### English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield					in	Volts	
Air	Air	19	38	75	27	1/4	153	0.110	90	.220	200	0.2
						3/8	154	0.120	60	.240		0.3
						1/2	156		45	0.5		
						5/8	158	0.130	40	.260		0.8
						3/4	162	0.140	30	.280		1.3
						1	172	0.160	20		N/A	

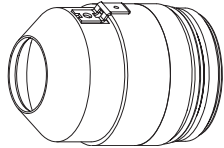
### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage Amps	Torch-to-Work Distance		Marking Speed		Arc Voltage Volts
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10		mm	in	mm/min	ipm	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a rougher cut edge with larger average angles than the 130A, H35/N<sub>2</sub> process

**Aluminum**  
H35 Plasma / N<sub>2</sub> Shield  
130 A Cutting

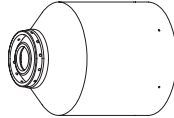
Flow Rates – lpm/scfh		
	H35	N <sub>2</sub>
Preflow	0 / 0	76 / 160
Cutflow	26 / 54	68 / 144



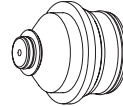
220173



220198



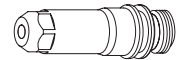
220304



220197



220179



220307

**Metric**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	mm	Volts	mm	mm/m	mm	factor %	seconds
H35	N <sub>2</sub>	19	38	75	54	10	158	5.0	1615	6.5	130	0.3
					42	12	156		1455			0.5
					27	15	156	4.5	1305	7.7	170	0.8
						20	157		940			1.3
					20	25	176	540	N/A			

**English**

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	in	Volts	in	ipm	in	factor %	seconds
H35	N <sub>2</sub>	19	38	75	54	3/8	158	.200	65	.26	130	0.3
					42	1/2	156		55			0.5
					27	5/8	156	.180	50	.31	170	0.8
						3/4	157		40			1.3
					20	1	176	20	N/A			

**Marking**

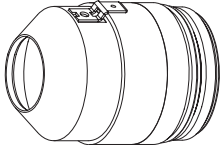
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
						Amps	mm	in	mm/min	ipm	Volts
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a smoother cut edge with smaller average angles than the 130A, Air/Air process

# OPERATION

## Aluminum H35 and N<sub>2</sub> Plasma / N<sub>2</sub> Shield 130 A Cutting

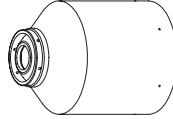
Flow Rates – lpm/scfh		
	H35	N <sub>2</sub>
Preflow	0 / 0	97 / 205
Cutflow	13 / 28	71 / 150



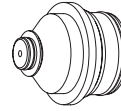
220173



220198



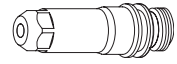
220304



220197



220179



220307

### Metric

Select Gases		Set Preflow		Set Cutflow				Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	Mix Gas 1	Mix Gas 2					mm	Volts	
H35	N <sub>2</sub>	19	60	75	27	32	18	6	156	3.5	2215	7.0	200	0.3
								10	158		1615			
								12	159	3.0	1455	6.0		
								15	160		1215			
								20	163		815			

### English

Select Gases		Set Preflow		Set Cutflow				Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma	Shield	Plasma	Shield	Plasma	Shield	Mix Gas 1	Mix Gas 2					in	Volts	
H35	N <sub>2</sub>	19	60	75	27	32	18	1/4	156	0.140	85	0.3	200	0.3
								3/8	158		65			
								1/2	159	0.120	55	.24		
								5/8	160		45			
								3/4	163		35			

### Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma	Shield	Plasma	Shield	Plasma	Shield		Amps	mm	in	mm/min	
N <sub>2</sub>	N <sub>2</sub>	10	10	10	10	18	2.5	0.100	6350	250	135

Note: This process produces a smoother cut edge with smaller average angles than the 130A, Air/Air process