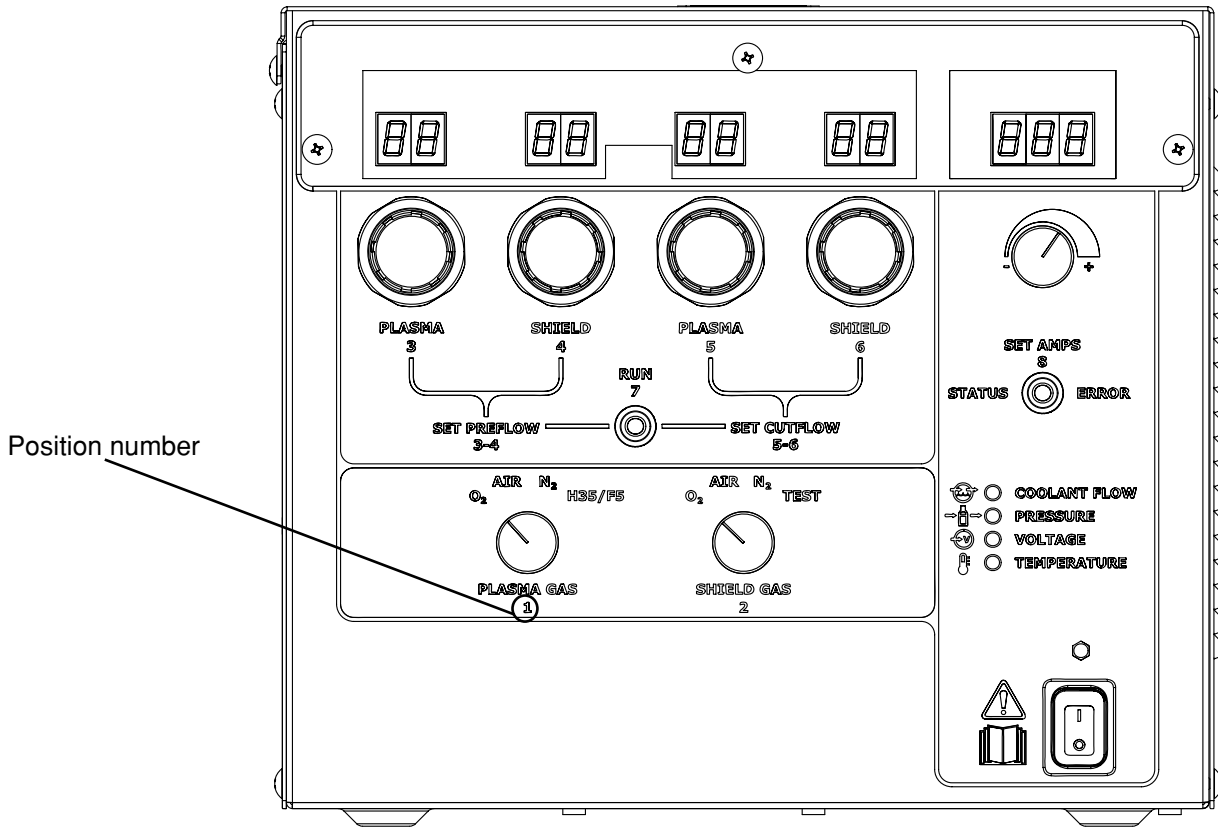


Manual gas console operation

The term “position number” refers to the numbers on the front panel of the gas console.

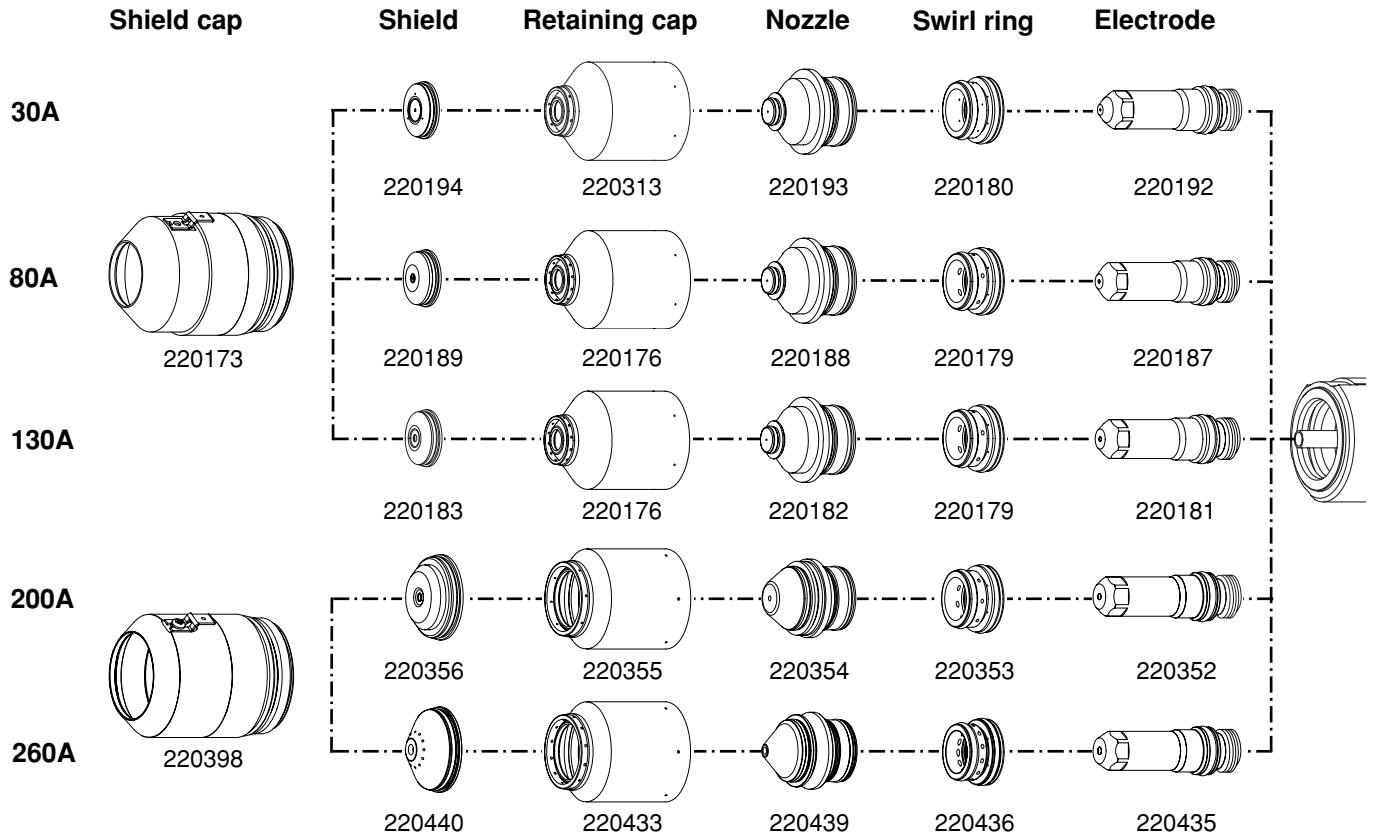


1. Turn ON the power.
2. Follow instructions below using the settings provided in the *Cut charts*.

<u>Position #</u>	<u>Instruction</u>
1	Select PLASMA GAS.
2	Select SHIELD GAS.
3, 4 & 7	Position switch (7) to SET PREFLOW (3-4). Set plasma preflow (3). Set shield preflow (4)
5, 6 & 7	Position switch (7) to SET CUTFLOW (5-6). Set plasma cutflow (5). Set shield cutflow (6).
7	Position switch (7) to RUN.
8	Position switch (8) to SET AMPS. Set amperage using knob above switch (8). Switch 8 can be in any position while operating. System is ready to cut.

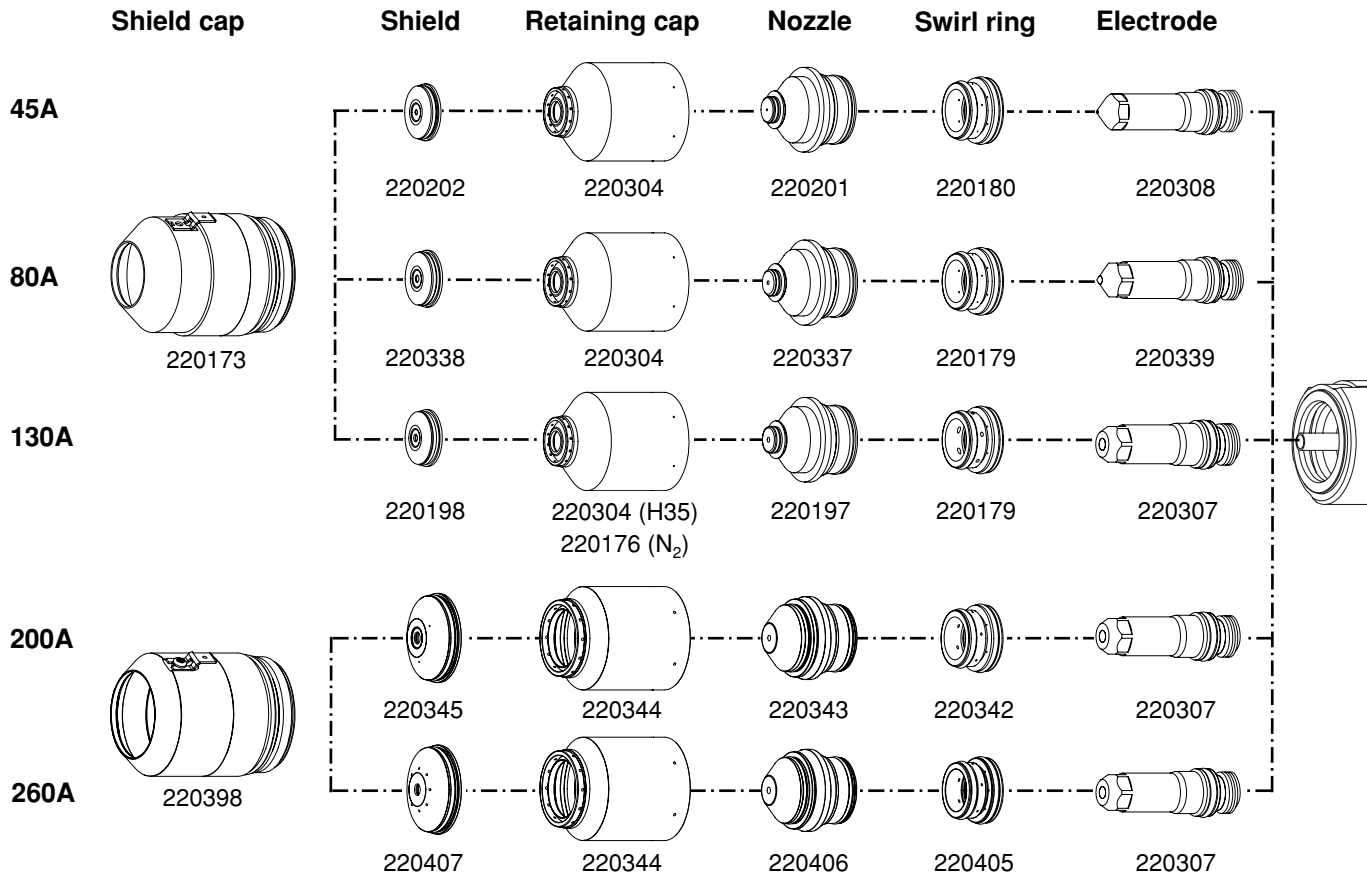
Consumable selection

Mild steel

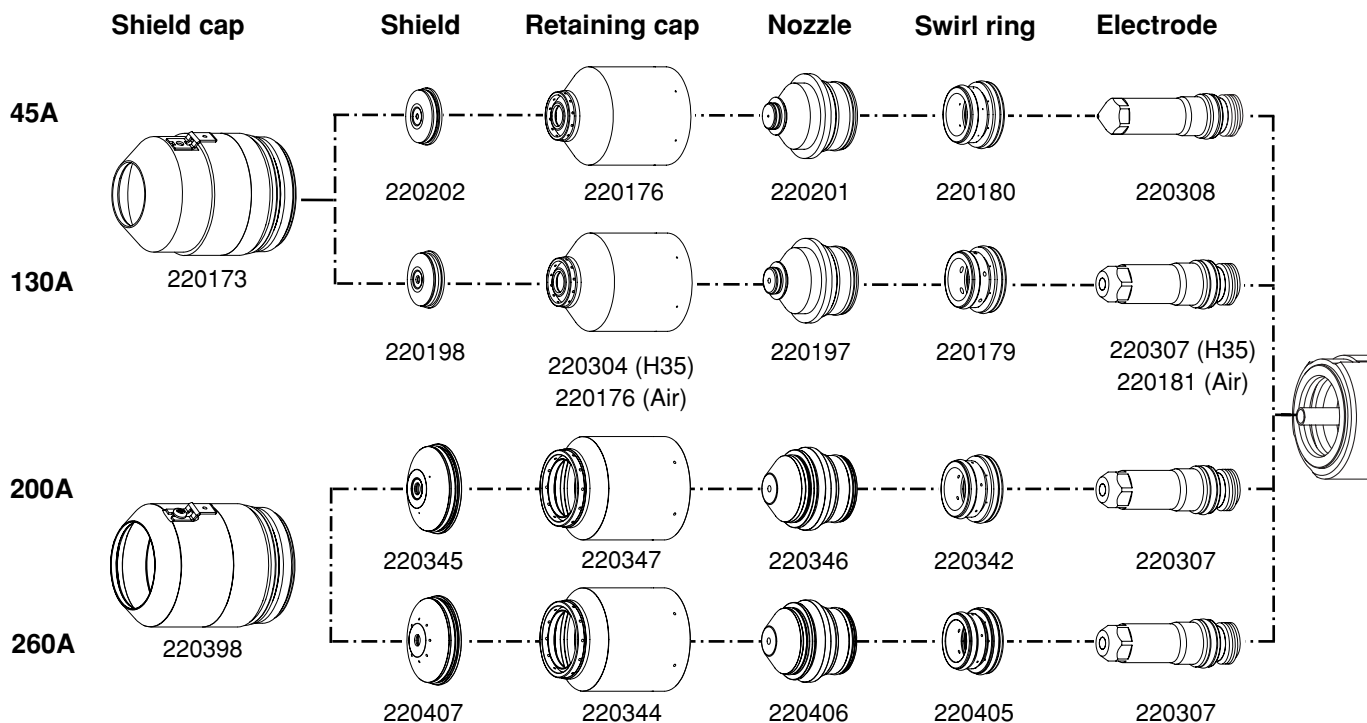


OPERATION

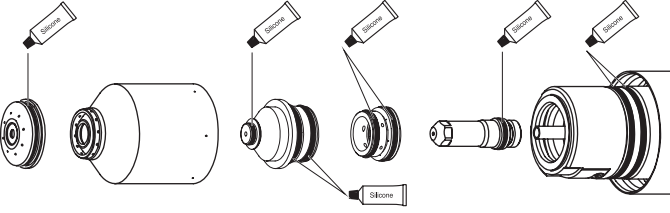
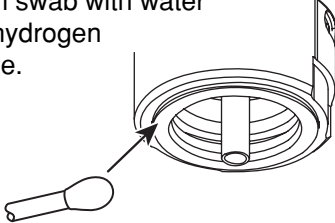
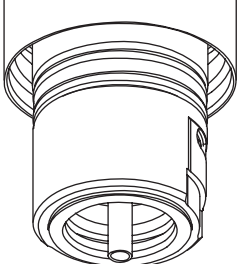
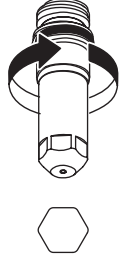
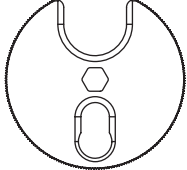

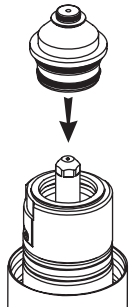
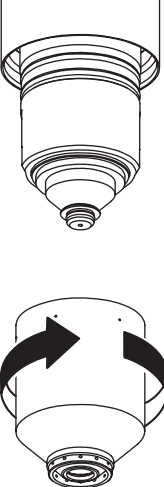
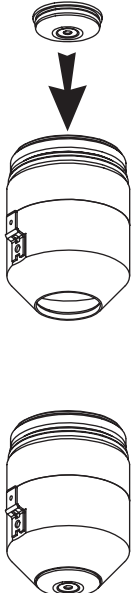
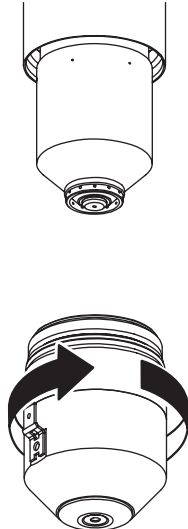
Stainless steel



Aluminum



Install consumables

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

Cut charts

The following *Cut charts* show the consumable parts, cutting speed 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).

Consumables for mirror-image cutting

See the *Parts List* section of this manual for part numbers.

Estimated kerf width compensation

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

Metric

Process	Thickness (mm)								
	1.5	3	6	10	12	20	25	32	38
MS									
260A O2-Air				2.54	2.79	3.43	3.81	4.32	4.45
200A O2-Air				2.18	2.26	2.95			
130A O2-Air			1.803	2.032	2.108	2.642	3.429		
80A O2-Air		1.372	1.727	1.905					
30A O2-O2	1.346	1.448							
SS									
260A N2-Air					2.54	3.08	3.30		
260A H35-N2					3.81	4.06	4.32		
200A N2-N2				2.16	2.88	2.92			
200A H35-N2				3.68	3.81	3.94			
130A H35-N2				2.718	2.769	2.896			
130A N2-N2			1.829	1.879	2.413				
80A F5-N2			1.194						
45A F5-N2	0.584	0.381	0.533						
45A N2-N2	0.483	0.229	0.152						
AL									
260A N2-Air					3.05	3.05	3.30		
260A H35-N2					2.79	3.30	3.56		
200A N2-N2				2.03	2.29	2.67			
200A H35-N2				2.67	2.92	3.30			
130A H35-N2				2.718	2.769	2.896			
130A Air-Air			2.083	2.083	2.184				
45A Air-Air	1.067	1.092	1.245						

English

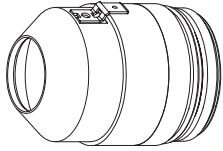
Process	Thickness (in)								
	0.060"	0.135"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"
MS									
260A O2-Air				0.100	0.110	0.135	0.150	0.170	0.175
200A O2-Air				0.086	0.089	0.116			
130A O2-Air			0.071	0.080	0.083	0.104	0.135		
80A O2-Air		0.054	0.068	0.075					
30A O2-O2	0.053	0.057							
SS									
260A N2-Air					0.100	0.120	0.130		
260A H35-N2					0.150	0.160	0.170		
200A N2-N2				0.085	0.090	0.115			
200A H35-N2				0.145	0.150	0.155			
130A H35-N2				0.107	0.109	0.114			
130A N2-N2			0.072	0.074	0.095				
80A F5-N2			0.047						
45A F5-N2	0.023	0.015	0.021						
45A N2-N2	0.019	0.009	0.006						
AL									
260A N2-Air					0.120	0.120	0.130		
260A H35-N2					0.110	0.130	0.140		
200A N2-N2				0.080	0.090	0.105			
200A H35-N2				0.105	0.115	0.130			
130A H35-N2				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 O₂ Plasma / O₂ Shield 30 A Cutting

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

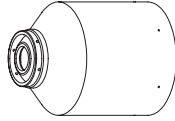
Note: Air must be connected to use this process. It is used as the preflow gas



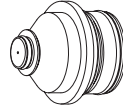
220173



220194



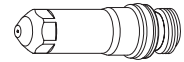
220313



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts		mm	factor %	seconds	
O ₂	O ₂	80	15	92	15	0.5	114	1.3	5355	2.3	180	0.1				
						0.8	115					0.2				
						1.0	116					0.3				
						1.2	117									
						1.5	119					2210				
						35	5					2	120	1.5	1490	2.7
			2.5		122			1325								
			3*		123			1160	0.5							
			4*		125			905	0.7							
			75		5			6*	128	665		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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts		in	factor %	seconds
O ₂	O ₂	80	15	92	15	.018	114	0.050	215	0.090	180	0.1			
						.024						200	0.2		
						.030						115	0.3		
						.036						116			
						.048						117	110		
						.060						119	85		
			35		5	.075	120	0.060	60	0.110		0.4			
						.105	122					50			
						.135*	123					40	0.5		
						3/16*	128					30	25	25	0.7
															1.0

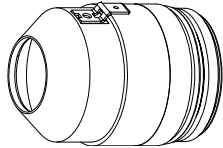
Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	11	1.8	0.070	6350	250	110

*Pierce complete is recommended for these thicknesses

Mild steel
O₂ Plasma / Air Shield
80 A Cutting

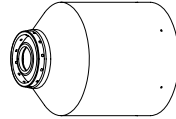
Flow Rates – lpm/scfh		
	O ₂	Air
Preflow	0 / 0	76 / 161
Cutflow	23 / 48	41 / 87



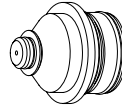
220173



220189



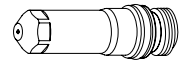
220176



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
O ₂	Air	50	30	72	30	2	112	2.5	9810	3.8	150	0.1
						2.5	115		7980			
						3	117		6145			
						4	120	2.0	4300	4.0	200	
						6	123		3045			
						10	127		1810			
					15	12	130	2.5	1410	5.0	250	0.7
						15	133		1030			0.8
						20	135		545			6.3

English

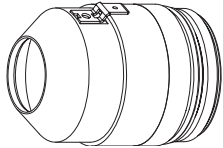
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
O ₂	Air	50	30	72	30	.075	112	0.100	400	0.150	150	0.1
						.105	115		290			
						.135	117		180			
						3/16	120	0.080	155	0.160	200	
						1/4	123		110			
						3/8	127		75			
					15	1/2	130	0.100	50	0.200	250	0.7
						5/8	133		37			0.8
						3/4	135		25			0.250

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	11	1.8	0.070	6350	250	130

Mild steel
O₂ Plasma / Air Shield
130 A Cutting

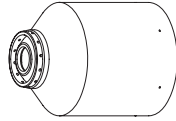
Flow Rates – lpm/scfh		
	O ₂	Air
Preflow	0 / 0	102 / 215
Cutflow	33 / 70	45 / 96



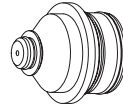
220173



220183



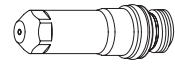
220176



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts		mm
O ₂	Air	35	40	80	35	3	124	2.5	6505	5.0	200	0.1	
						4	126	2.8	5550	5.6		0.2	
						6	127		4035	0.3			
					28	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	
		65	20	138	4.0	1050	190	1.8					
			25	141		550		N/A					
			32	160		375							
								38	167	4.5	255		

English

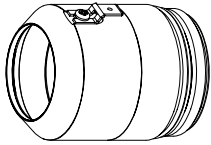
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
O ₂	Air	35	40	80	35	.135	124	0.100	240	0.200	200	0.1
						3/16	126	0.110	190	0.220		0.2
						1/4	127		150	0.3		
					28	3/8	130	0.120	110	0.240		0.5
						1/2	132	0.130	80	0.260		0.7
						5/8	135	0.150	60	0.300		1
		3/4	138	45	190	1.8						
		65	1.0	141	0.160	20	190	N/A				
			1-1/4	160	0.180	15						
			1-1/2	167		10						

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	11	1.8	0.070	6350	250	130

Mild steel
O₂ Plasma / Air Shield
200 A Cutting

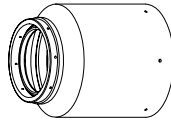
Flow Rates – lpm/scfh		
	O ₂	Air
Preflow	0 / 0	128 / 270
Cutflow	39 / 82	48 / 101



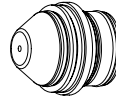
220398



220356



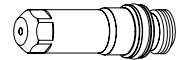
220355



220354



220353



220352

Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
O ₂	Air	24	65	69	28	6	124	3.3	5250	6.6	200	0.2
						10	126		3460			0.3
						12	128		3060			0.5
						15	131	4.1	2280	8.2		0.6
						20	133		1575			0.8
						25	143	5.1	1165	10.2		1.0
						32	145		750			N/A
						38	152		510			N/A
						50	163		255			N/A

English

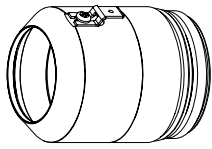
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
O ₂	Air	24	65	69	28	3/16	124	0.130	230	0.260	200	0.2
						1/4	124		200			0.2
						3/8	126		140			0.3
						1/2	128	0.160	115	0.320		0.5
						5/8	131		80			0.6
						3/4	133	0.200	65	0.400		0.8
						1	143		45			1.0
						1-1/4	145		30			N/A
						1-1/2	152		20			N/A
2	163	10	N/A									

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	13	1.8	0.070	6350	250	130

Mild steel
O₂ Plasma / Air Shield
260 A Cutting

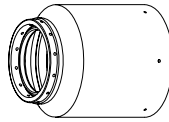
Flow Rates – lpm/scfh @ 3/4" setting		
	O ₂	Air
Preflow	0 / 0	130 / 275
Cutflow	42 / 88	104 / 220



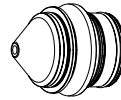
220398



220440



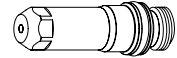
220433



220439



220436



220435

Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time			
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts		mm	mm	factor %
O ₂	Air	24	75	70	70	6	150	2.8	6500	8.5	300	0.3			
						10	150		4440						
						12	150		3850						
				75	75	75	75	75	15	155	3.6	3130	9.0	250	0.5
									20	159		2170			0.6
									22	166		1930			0.7
									25	171		1685			0.8
									28	170		1445			0.9
									32	172		1135			1.0
				80	75	75	75	75	38	174	4.8	895	9.5	200	1.2
									44	185		580			N/A
									50	188		405			
									58	193		290			
									64	202		195			

English

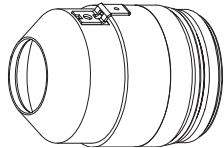
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time			
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts		in	factor %	seconds
O ₂	Air	24	75	70	70	1/4	150	0.110	245	0.330	300	0.3			
						3/8	150		180						
						1/2	150		145						
				75	75	75	75	75	5/8	155	0.140	115	0.350	250	0.5
									3/4	159		90			0.6
									7/8	166		75			0.7
									1	171		65			0.8
									1-1/8	170		55			0.9
									1-1/4	172		45			1.0
				80	75	75	75	75	1-1/2	174	0.190	35	0.380	200	1.2
									1-3/4	185		22			N/A
									2	188		15			
									2-1/4	193		12			
									2-1/2	202		8			

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Stainless steel
N₂ Plasma / N₂ Shield
45 A Cutting

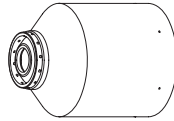
Flow Rates – lpm/scfh	
	N ₂
Preflow	24 / 51
Cutflow	75 / 159



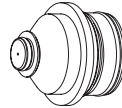
220173



220202



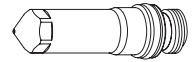
220304



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
N ₂	N ₂	35	5	55	60	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		0.3			
4.0	1580											

English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
N ₂	N ₂	35	5	55	60	.036	94	0.100	240	0.150	150	0.0
						.048			210			0.1
						.060	95		180			0.2
						.075	97		160			
						.105	101		120			
						.135	103		75			

Marking

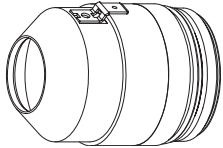
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	10	10	50	10	14	2.5	0.100	6350	250	90

Note: This process produces a darker cut edge than the 45A, F5/N₂ stainless steel process

OPERATION

Stainless steel F5 Plasma / N₂ Shield 45 A Cutting

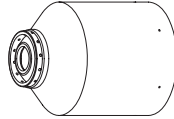
Flow Rates – lpm/scfh		
	F5	N ₂
Preflow	0 / 0	43 / 91
Cutflow	8 / 17	65 / 138



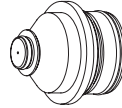
220173



220202



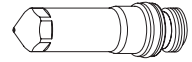
220304



220201



220180



220308

Metric

Select Gases		Set Preflow		Set Outflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)	mm	Volts	mm	mm/m	mm	factor %	seconds
F5	N ₂	35	25	55	60	0.8	99	2.5	6570	3.8	150	0.2
						1.0			5740			
						1.2			4905			
						1.5			3890			
						2.0	3175					
						2.5	2510					
						3.0	2010					
					4.0	1435	0.3					
15	6.0	110	2.0	845	190	0.5						

English

Select Gases		Set Preflow		Set Outflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)	in	Volts	in	ipm	in	factor %	seconds
F5	N ₂	35	25	55	60	.036	99	0.100	240	0.150	150	0.2
						.048			190			
						.060			150			
						.075			130			
						.105	90					
						.135	65					
						3/16	108		0.3			
					15	1/4	110		0.080			45
								30			0.5	

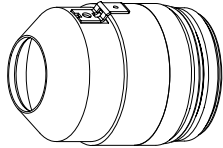
Marking

Select Gases		Set Preflow		Set Outflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)	Amps	mm	in	mm/min	ipm	Volts
N ₂	N ₂	10	10	50	10	14	2.5	0.100	6350	250	90

Note: This process produces a shinier cut edge than the 45A, N₂/N₂ stainless steel process

Stainless steel
F5 Plasma / N₂ Shield
80 A Cutting

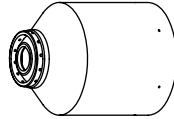
Flow Rates – lpm/scfh		
	F5	N ₂
Preflow	0 / 0	67 / 142
Cutflow	31 / 65	55 / 116



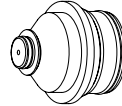
220173



220338



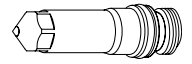
220304



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
F5	N ₂	35	30	60	45	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

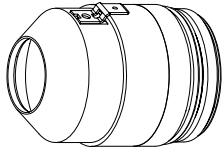
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
F5	N ₂	35	30	60	45	.135	108	0.120	105	0.180	150	0.2
						3/16	110	0.110	60	0.170		0.3
						1/4	112	0.100	45	0.150		0.5
						3/8	120	0.120	25	0.180		

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Stainless steel
N₂ Plasma / N₂ Shield
130 A Cutting

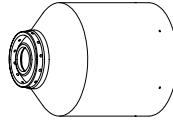
Flow Rates – lpm/scfh	
N ₂	
Preflow	97 / 205
Cutflow	79 / 168



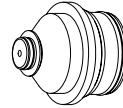
220173



220198



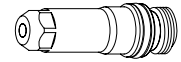
220176



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
N ₂	N ₂	20	65	70	30	6	153	3.0	1960	6.0	200	0.3
						10	156		1300			0.5
						12	162	3.5	900			7.0
						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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
N ₂	N ₂	20	65	70	30	1/4	153	0.120	75	0.240	200	0.3
						3/8	156		55			0.5
						1/2	162	0.140	30			0.280
						5/8	167	0.150	25	N/A		
						3/4	176	0.170	15	N/A		

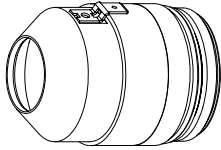
Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	13	1.8	0.070	6350	250	130

Note: This process produces a rougher, darker cut edge with more dross and less cut angle variation than the 130A, H35/N₂ process

Stainless steel
H35 Plasma / N₂ Shield
130 A Cutting

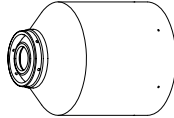
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	76 / 160
Cutflow	26 / 54	68 / 144



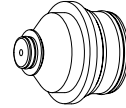
220173



220198



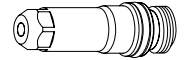
220304



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
H35	N ₂	20	40	70	60	10	154	4.5	980	7.7	170	0.3
					45	12	158		820			0.5
					30	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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
H35	N ₂	20	40	70	60	3/8	154	0.180	40	0.310	170	0.3
					45	1/2	158		30			0.5
					30	5/8	162		20			0.8
					20	3/4	165		15			1.3
					20	1	172		10			N/A

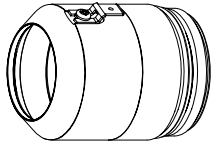
Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	13	1.8	0.070	6350	250	130

Note: This process produces a smoother, shinier cut edge with less dross and greater cut angle variation than the 130A, N₂/N₂ process

Stainless steel
H35 Plasma / N₂ Shield
200 A Cutting

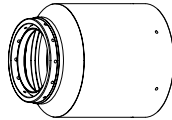
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	116 / 245
Cutflow	30 / 63	104 / 220



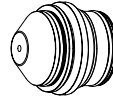
220398



220345



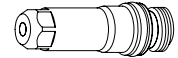
220344



220343



220342



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
H35	N ₂	21	65	82	75	10	175	9.0	1620	9.0	100	0.5
						12	170	7.5	1450	7.5		0.6
						15	173		1200	0.7		
						20	177		820	0.8		

English

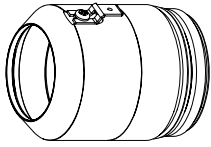
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
H35	N ₂	21	65	82	75	3/8	175	0.350	65	0.350	100	0.5
						1/2	170	0.300	55	0.300		0.6
						5/8	173		45			0.7
						3/4	177		35			0.8

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Stainless steel
N₂ Plasma / N₂ Shield
200 A Cutting

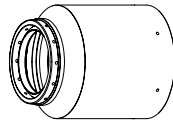
Flow Rates – lpm/scfh	
N ₂	
Preflow	111 / 235
Cutflow	137 / 290



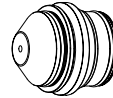
220398



220345



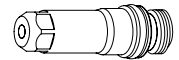
220344



220343



220342



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
N ₂	N ₂	21	65	82	65	10	160	3.8	2700	7.6	200	0.5
						12	161		2400			0.6
						15	163		1800			0.8
						20	167		1000			1

English

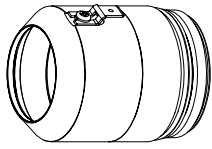
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
N ₂	N ₂	21	65	82	65	3/8	160	0.150	110	0.300	200	0.5
						1/2	161		90			0.6
						5/8	163		65			0.8
						3/4	167		45			1

Marking

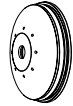
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Stainless steel
H35 Plasma / N₂ Shield
260 A Cutting

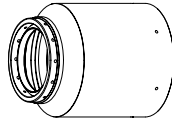
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	127 / 270
Cutflow	40 / 84	122 / 260



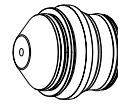
220398



220407



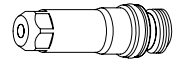
220344



220406



220405



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts		mm	mm/m	mm	factor %
H35	N ₂	11	75	80	88	10	185	11.0	1870	12.5	100	0.3				
						12	173	9.0	1710				9.0	120	0.4	
						15	171	7.5	1465							0.5
						20	175		1085	0.6						
						25	180		785		0.7					
						32	185		630			1.0				
						38	186		510							
						44	189		390							
						50	200		270							

English

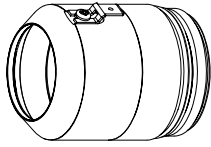
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time				
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts		in	ipm	in	factor %
H35	N ₂	11	75	80	88	3/8	185	0.450	75	0.450	100	0.3				
						1/2	173	0.350	65				0.360	120	0.4	
						5/8	171	0.300	55							0.5
						3/4	175		45	0.6						
						1	180		30		0.7					
						1-1/4	185		25			1.0				
						1-1/2	186		20							
						1-3/4	189		15							
						2	200		10							

Marking

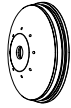
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Stainless steel
N₂ Plasma / Air Shield
260 A Cutting

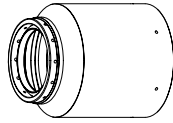
Flow Rates – lpm/scfh		
	N ₂	Air
Preflow	127 / 270	0 / 0
Cutflow	54 / 114	116 / 245



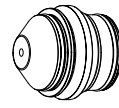
220398



220407



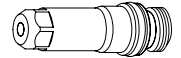
220344



220406



220405



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts		mm
N ₂	Air	11	75	75	82	6	160	3.8	6375	7.5	200	0.3	
						10	157		3440				
						12	161		2960				0.4
						15	163		2520				
						20	164		1590				0.5
						25	168		1300				
						32	171		875			1.0	
						38	179		515				
						44	190		365			N/A	
						50	195		180				

English

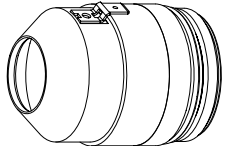
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time	
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts		in
N ₂	Air	11	75	75	82	1/4	160	0.150	240	0.300	200	0.3	
						3/8	157		140				
						1/2	161		110				0.4
						5/8	163		95				
						3/4	164		70				0.5
						1	168		50				
						1-1/4	171		35			1.0	
						1-1/2	179		20				
						1-3/4	190		14			N/A	
						2	200		6				

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Aluminum
Air Plasma / Air Shield
45 A Cutting

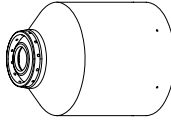
Flow Rates – lpm/scfh	
Air	
Preflow	45 / 95
Cutflow	78 / 165



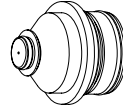
220173



220202



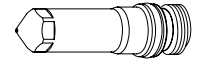
220176



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
Air	Air	35	25	55	60	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			
					40	4.0	102	1.8	2575	2.7	0.3	
					6.0	117	3.0	1690	4.5	0.6		

English

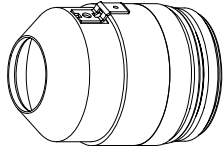
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
Air	Air	35	25	55	60	.048	130	0.100	220	0.150	150	0.2
						.060	115		170			
						.075	113		160			
						.105	110		140			
						40	.135		102			
					3/16	114	0.120	90	0.180	0.4		
					1/4	117	60	60	0.180	0.6		

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	10	10	50	10	14	2.5	0.100	6350	250	90

Aluminum
Air Plasma / Air Shield
130 A Cutting

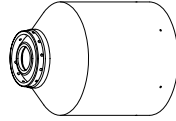
Flow Rates – lpm/scfh	
Air	
Preflow	73 / 154
Cutflow	78 / 165



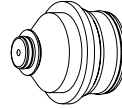
220173



220198



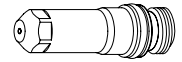
220176



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
Air	Air	20	40	70	30	6	153	2.8	2370	5.6	200	0.2
						10	154	3.0	1465	6.0		0.3
						12	156		1225	6.0		0.5
						15	158	3.3	1050	6.6		0.8
						20	162	3.5	725	7.0		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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
Air	Air	20	40	70	30	1/4	153	0.110	90	0.220	200	0.2
						3/8	154	0.120	60	0.240		0.3
						1/2	156		45	0.240		0.5
						5/8	158	0.130	40	0.260		0.8
						3/4	162	0.140	30	0.280		1.3
						1	172	0.160	20	N/A		

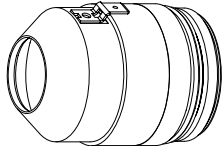
Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	13	1.8	0.070	6350	250	130

Note: This process produces a rougher cut edge with larger average angles than the 130A, H35/N₂ process

Aluminum
H35 Plasma / N₂ Shield
130 A Cutting

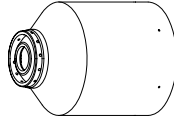
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	76 / 160
Cutflow	26 / 54	68 / 144



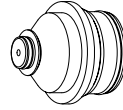
220173



220198



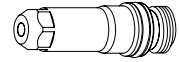
220304



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
H35	N ₂	20	40	70	60	10	158	5.0	1615	6.5	130	0.3
					45	12	156	4.5	1455	7.7	170	0.5
					30	15	156		1305			0.8
					20	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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
H35	N ₂	20	40	70	60	3/8	158	0.200	65	0.260	130	0.3
					45	1/2	156	0.180	55	0.310	170	0.5
					30	5/8	156		50			0.8
					20	3/4	157		40			1.3
					20	1	176		20			N/A

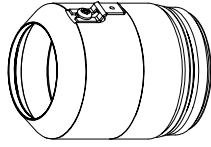
Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	13	1.8	0.070	6350	250	130

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

Aluminum
H35 Plasma / N₂ Shield
200 A Cutting

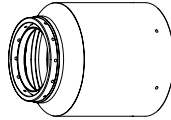
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	113 / 240
Cutflow	34 / 72	90 / 190



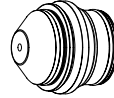
220398



220345



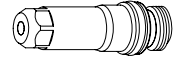
220347



220346



220342



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
H35	N ₂	21	65	70	65	10	152	6.4	4400	9.0	140	0.3
						12	150		3800			0.4
						15	150		3000			0.5
						20	159		1450			0.6

English

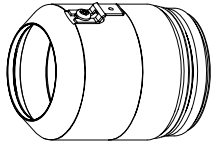
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
H35	N ₂	21	65	70	65	3/8	152	0.250	180	0.350	140	0.3
						1/2	150		140			0.4
						5/8	150		110			0.5
						3/4	159		70			0.6

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Aluminum
N₂ Plasma / N₂ Shield
200 A Cutting

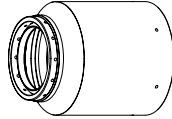
Flow Rates – lpm/scfh	
N ₂	
Preflow	113 / 240
Cutflow	135 / 287



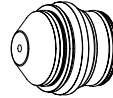
220398



220345



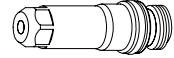
220347



220346



220342



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
N ₂	N ₂	21	65	70	65	10	158	6.40	4750	9.0	140	0.4
						12	158		3500			0.5
						15	166		2350			0.6
						20	165		1000			0.8

English

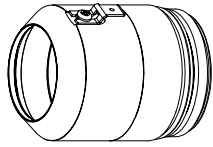
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
N ₂	N ₂	21	65	70	65	3/8	158	0.250	200	0.350	140	0.4
						1/2	158		120			0.5
						5/8	166		80			0.6
						3/4	165		50			0.8

Marking

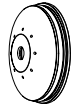
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Aluminum
H35 Plasma / N₂ Shield
260 A Cutting

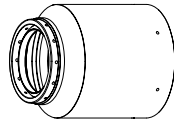
Flow Rates – lpm/scfh		
	H35	N ₂
Preflow	0 / 0	127 / 270
Cutflow	33 / 70	118 / 250



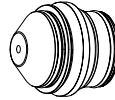
220398



220407



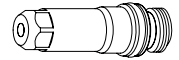
220344



220406



220405



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
H35	N ₂	11	75	70	85	6	170	11.0	7200	11.0	100	0.2
						10	170	10.0	6120	10.0	100	0.4
						12	162	7.6	5160	8.5	110	0.5
						15	163		3720			0.6
						20	166		2230			0.6
						25	174		1930			0.8
						32	175		1510			N/A
						38	176	1150				
						44	183	670				
						50	190	390				

English

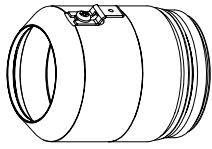
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
H35	N ₂	11	75	70	85	1/4	170	0.450	280	0.450	100	0.2
						3/8	170	0.400	250	0.400	100	0.4
						1/2	162	0.300	190	0.330	110	0.5
						5/8	163		130			0.6
						3/4	166		90			0.6
						1	174		75			0.8
						1-1/4	175		60			N/A
						1-1/2	176	45				
						1-3/4	183	25				
						2	190	14				

Marking

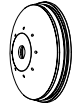
Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130

Aluminum
N₂ Plasma / Air Shield
260 A Cutting

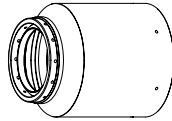
Flow Rates – lpm/scfh		
	N ₂	Air
Preflow	125 / 265	0 / 0
Cutflow	50 / 105	113 / 240



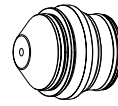
220398



220407



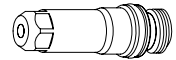
220344



220406



220405



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 (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					mm	Volts	
N ₂	Air	12	75	70	82	6	172	6.4	7900	9.0	140	0.2
						10	171		4930			0.4
						12	164	4.0	4290	8.0	200	0.5
						15	165		3330			0.6
						20	171		1940			0.8
						25	177		1440	12.0	300	0.8
						32	191		940	N/A		
						38	195	520				
						44	202	320				
						50	205	215				

English

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)					in	Volts	
N ₂	Air	12	75	70	82	1/4	172	0.250	300	0.350	140	0.2
						3/8	171		200			0.4
						1/2	164	0.160	160	0.320	200	0.5
						5/8	165		120			0.6
						3/4	171		80			0.8
						1	177		55	0.420	300	
						1-1/4	191		40	N/A		
						1-1/2	195	20				
						1-3/4	202	12				
						2	205	8				

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
Plasma (1)	Shield (2)	Plasma (3)	Shield (4)	Plasma (5)	Shield (6)		Amps	mm	in	mm/min	
N ₂	N ₂	11	80	50	10	15	1.8	0.070	6350	250	130