

Consumable selection

Standard cutting (0°)

Most of the consumables on the following pages are designed for standard (straight) cutting, when the torch is perpendicular to the workpiece.

Bevel cutting (0° to 45°)

The 80 amp, 130 amp, and 260 amp bevel cutting processes have consumables that are specifically designed for bevel applications. The 400 amp, 600 amp, and 800 amp processes have one set of consumables for both straight cutting and bevel cutting. These consumables use a tapered design that allows them to be used in other applications such as robotic cutting and thick material piercing. Bevel specific cut charts are provided for all bevel cutting processes.

PowerPierce technology

All bevel consumables have been optimized for PowerPierce, which uses the tapered design to increase pierce capabilities. The 200 amp and 260 amp standard consumables have also been optimized for PowerPierce. Note that the 130 amp standard consumables have not been optimized for PowerPierce. If you wish to pierce thicker material with the 130 amp process, use the 130 amp **bevel specific** consumables.

Marking

Any of the consumable sets can also be used for marking with argon or nitrogen. Marking parameters are shown at the bottom of each cut chart. The quality of the marks will vary depending on the marking process, cut process, material type, material thickness, and material surface finish. For best mark quality, use the argon marking process settings. For all marking processes the depth of the mark can be increased by reducing the marking speed, or the depth can be decreased by increasing the marking speed. Argon marking currents can be increased by up to 30% to increase the depth of the mark. When marking with an argon process at 25 amps or greater, the process will start with air before changing to argon, and a thicker, darker mark will be seen at the start of the mark. When using the argon marking processes, mark and cut individual parts. Marking the entire nest prior to cutting may lead to reduced consumable life. For better results intersperse cuts and marks. Poor quality marking or burn-through may occur with material less than 1.5 mm (0.06 in. or 16 gauge).

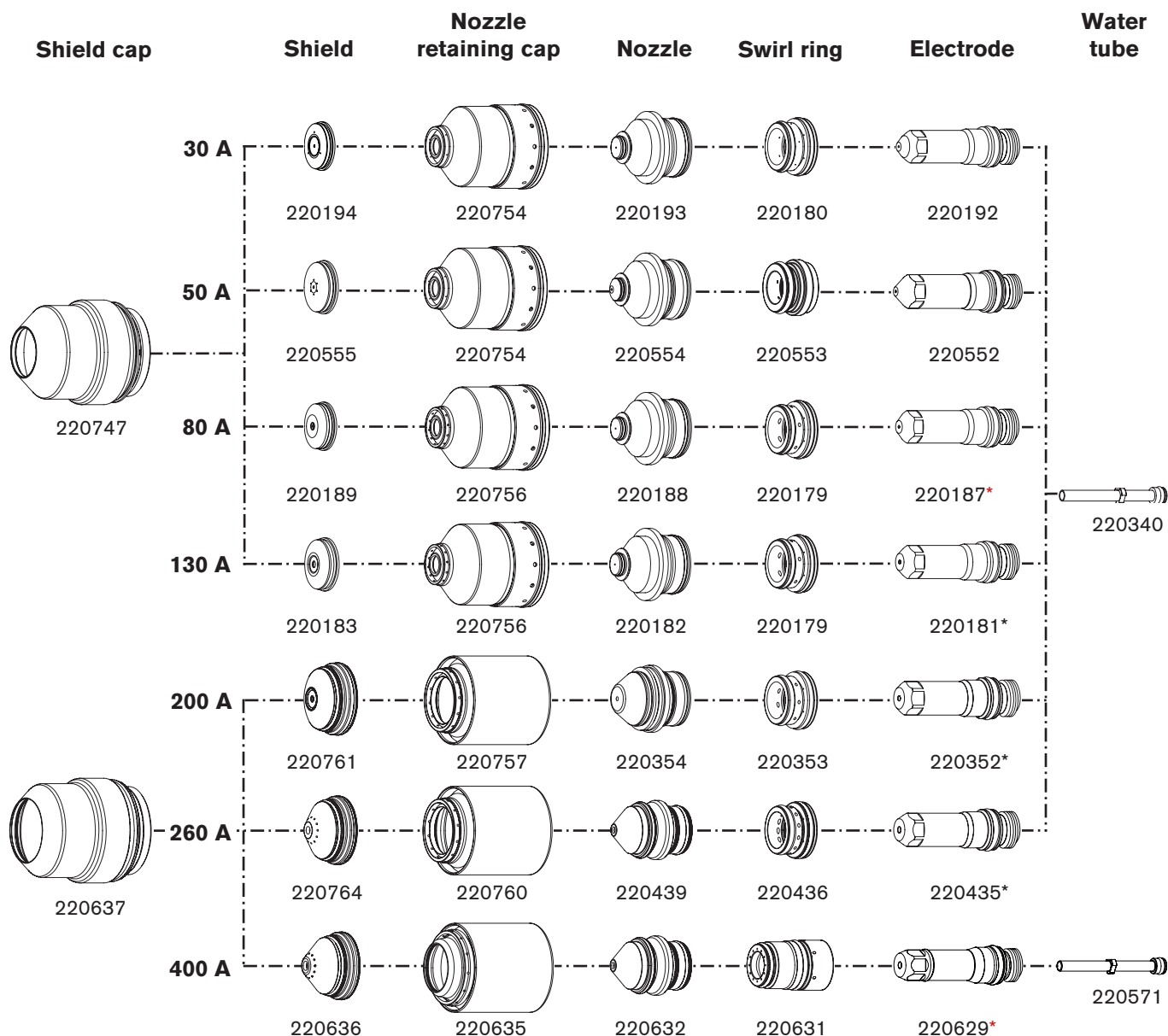
Consumables for mirror-image cutting

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

SilverPlus electrodes

SilverPlus electrodes provide increased life when the average cut duration is short (< 60 Seconds), and cut quality is not the most critical requirement. SilverPlus electrodes are available for **80 amp, 130 amp, 200 amp, 260 amp, and 400 amp** mild steel O₂ / Air cutting. Part numbers can be found on the following page.

Mild steel



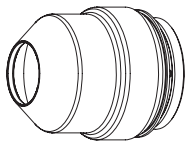
* SilverPlus electrodes are available for these processes.

Mild steel, 80 amp, O₂ / Air – 420566
 Mild steel, 130 amp, O₂ / Air – 220665
 Mild steel, 200 amp, O₂ / Air – 220666
 Mild steel, 260 amp, O₂ / Air – 220668
 Mild steel, 400 amp, O₂ / Air – 420530

OPERATION

Mild steel O₂ Plasma / Air Shield 80 A

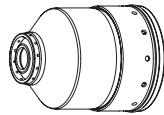
Flow rates – lpm/scfh		
	O ₂	Air
Preflow	0 / 0	76 / 161
Cutflow	23 / 48	41 / 87



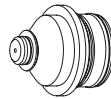
220747



220189



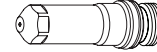
220756



220188



220179



220187
420566 - SilverPlus



220340

Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma gas	Shield gas	Plasma gas	Shield gas	Plasma gas	Shield gas	mm	Volts	mm	mm/m	mm	Factor %	Seconds
O ₂	Air	50	30	72	30	2	112	2.5	9810	3.8	150	0.1
						2.5	115		7980			
						3	117		6145			
					15	4	120	2.0	4300	4.0	200	0.2
						5	121		3670			
						6	123		3045			
						8	125		2430			0.3
						10	127		1810			0.4
						12	130		1410			0.5
						15	133		1030	5.0	250	0.7
						20	135		545			0.8
								2.5	545			0.9

English

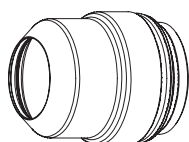
Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma gas	Shield gas	Plasma gas	Shield gas	Plasma gas	Shield gas	in	Volts	in	ipm	in	Factor %	Seconds
O ₂	Air	50	30	72	30	0.075	112	0.10	400	0.15	150	0.1
						0.105	115		290			
						0.135	117		180			
					15	3/16	120	0.08	155	0.16	200	0.2
						1/4	123		110			
						5/16	125		96			0.3
						3/8	127		75			0.4
						1/2	130		50			0.5
						5/8	133		37	0.20	250	0.7
						3/4	135		25			0.8
								0.10	25			0.9

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
						Amps	mm	in	mm/m	ipm	Volts
N ₂	N ₂	10	10	10	10	15	2.5	0.10	6350	250	130
Ar	Air	50	10	50	10	15	3.0	0.12	2540	100	78

Mild steel
O₂ Plasma / Air Shield
400 A

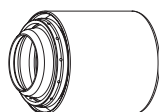
Flow rates – lpm/scfh		
	O ₂	Air
Preflow	0 / 0	190 / 400
Cutflow	66 / 140	137 / 290



220637



220636



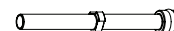
220635



220632



220631


220629
420530 - SilverPlus


220571

Metric

Select Gases		Set Preflow		Set Cutflow		Material Thickness	Arc Voltage	Torch-to-Work Distance	Cutting Speed	Initial Pierce Height		Pierce Delay Time
Plasma gas	Shield gas	Plasma gas	Shield gas	Plasma gas	Shield gas	mm	Volts	mm	mm/m	mm	Factor %	Seconds
O ₂	Air	22	82	55	82	12	139	3.6	4430	7.2	200	0.4
						15	142		3950			0.5
						20	146		2805			0.7
						22	148	3.8	2540	7.6		0.8
						25	150	4.0	2210	8.0		0.9
						30	153	4.6	1790	9.2		1.1
						40	158		1160	11.5	250	1.9
						50	167	5.3	795	19.1	360	5.2
						60	173	6.4	580	Edge start		
						70	183		380			
						80	197	7.9	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 gas	Shield gas	Plasma gas	Shield gas	Plasma gas	Shield gas	in	Volts	in	ipm	in	Factor %	Seconds
O ₂	Air	22	82	55	82	1/2	140	0.14	170	0.28	200	0.4
						5/8	143		150			0.5
						3/4	145		115			0.6
						7/8	148	0.15	100	0.30		0.8
						1	151	0.16	85	0.32		0.9
						1-1/4	153	0.18	65	0.36		1.2
						1-1/2	157		48	0.45	250	1.6
						1-3/4	160		40			2.5
						2	168	0.21	30	0.75	360	5.5
						2-1/4	171	0.25	25	Edge start		
						2-1/2	175		20			
						3	193	0.31	10			

Marking

Select Gases		Set Preflow		Set Cutflow		Amperage	Torch-to-Work Distance		Marking Speed		Arc Voltage
						Amps	mm	in	mm/m	ipm	Volts
N ₂	N ₂	10	10	10	10	22	2.5	0.10	1270	50	123
Ar	Air	20	10	30	10	25	3.0	0.12	1270	50	55

Consumable parts kits

Note: See *Consumable selection* or *Cut charts* in section 4 for specific applications

Mild steel parts kit – 228367

<u>Part Number</u>	<u>Description</u>	<u>Qty.</u>
026009	O-ring: 0.208" X 0.070"	5
027055	Lubricant: Silicone 1/4-oz tube	1
044028	O-ring: 1.364" X 0.070"	2
104119	Tool: Consumable removal / replacement	1
104269	Wrench: Spanner	1
220179	Swirl ring: 80 A/130 A	1
220180	Swirl ring: 30 A	1
220181	Electrode: 130 A	2
220182	Nozzle: 130 A	3
220183	Shield: 130 A	2
220187	Electrode: 80 A	2
220188	Nozzle: 130 A	2
220189	Shield: 80 A	1
220192	Electrode: 30 A	2
220193	Nozzle: 30 A	2
220194	Shield: 30 A	1
220340	Water tube with o-ring	1
220352	Electrode: 200 A	2
220353	Swirl ring: 200 A	1
220354	Nozzle: 200 A	3
220435	Electrode: 260 A	2
220436	Swirl ring: 260 A	1
220439	Nozzle: 260 A	3
220552	Electrode: 50 A	2
220553	Swirl ring: 50 A	1
220554	Nozzle: 50 A	2
220555	Shield: 50 A	1
220571	Water tube with o-ring (bevel)	1
220629	Electrode: 400 A	3
220631	Swirl ring: 400 A	1
220632	Nozzle: 400 A	3
220635	Nozzle retaining cap: 400 A	1
220636	Shield: 400 A	2
220637	Shield cap: 400 A	1
420566	SilverPlus Electrode: 80 A	1
220665	SilverPlus electrode: 130 A	1
220666	SilverPlus electrode: 200 A	1
220668	SilverPlus electrode: 260 A	1
420530	SilverPlus Electrode: 400 A	1
220747	Shield cap: 130 A	1
220754	Nozzle retaining cap: 30 A	1
220756	Nozzle retaining cap: 130 A	1
220757	Nozzle retaining cap: 200 A	1
220760	Nozzle retaining cap: 260 A	1
220761	Shield: 200 A	2
220764	Shield: 260 A	2