

CUT / GOUGING INDEX

CUT / GOUGING INDEX					
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* Dual Gas Mixer required

† Unshielded Consumable Parts

** Extended Consumables Cut Chart

MAX100D Machine/PAC160 Hand Torch



CUTTING

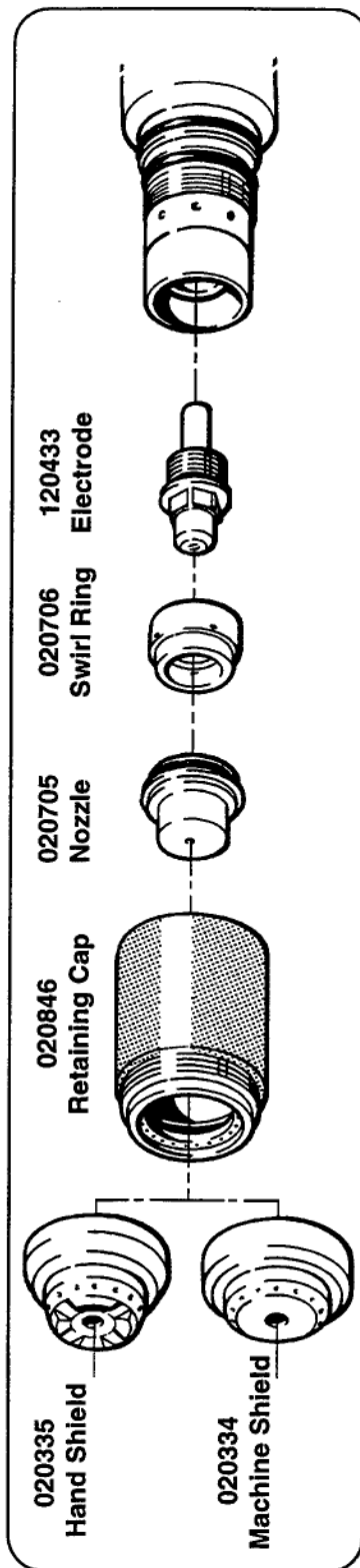
Mild Steel Cutting

Plasma Gas: Air

Shield Gas: Air

Current Setting: 100 Amp

This gas combination gives good cut speed, low dross levels and is very economical. Some surface nitriding can occur.



Material Thickness (Inches) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Setting (volts)							
1/4	50	70†	60	1/8	3	100	135	80	120	3048	100†	100	100
3/8							140		80	2032			
1/2							145		45	1143			
5/8							150		30	762			
3/4*							155		17	432			
1*							165		11	279			
1-1/4*							170		6	152			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

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MAX100D Machine/PAC160 Hand Torch

Mild Steel Cutting

Plasma Gas: N₂

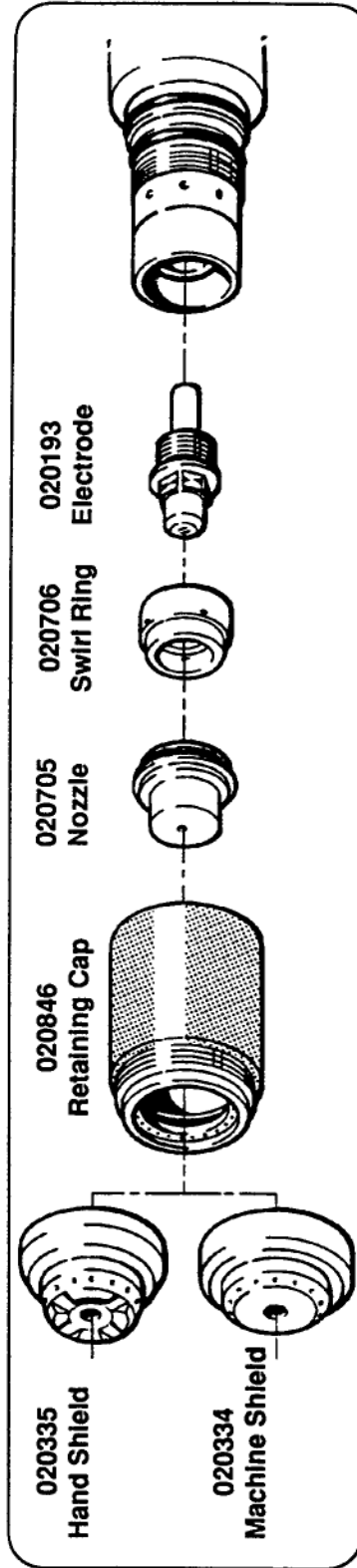
Shield Gas: Air

Current Setting: 100 Amp



CUTTING

This gas combination is used when cut edge quality and surface nitriding are less important. Electrode life is extended when this combination is used.



Material Thickness (Inches) (mm)	Plasma Gas Pressure Nitrogen		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Approx. Motion Delay Time (sec)	Plasma Gas (N ₂) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)			Current Setting (amps)	Voltage Setting (volts)					
1/4	50	80†	60	1/8	3	100	140	80	65	1651	100
3/8							145		50	1270	
1/2							150		40	1016	
5/8							155		20	508	
3/4*							165		10	254	

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch

Mild Steel Cutting

Plasma Gas: N₂

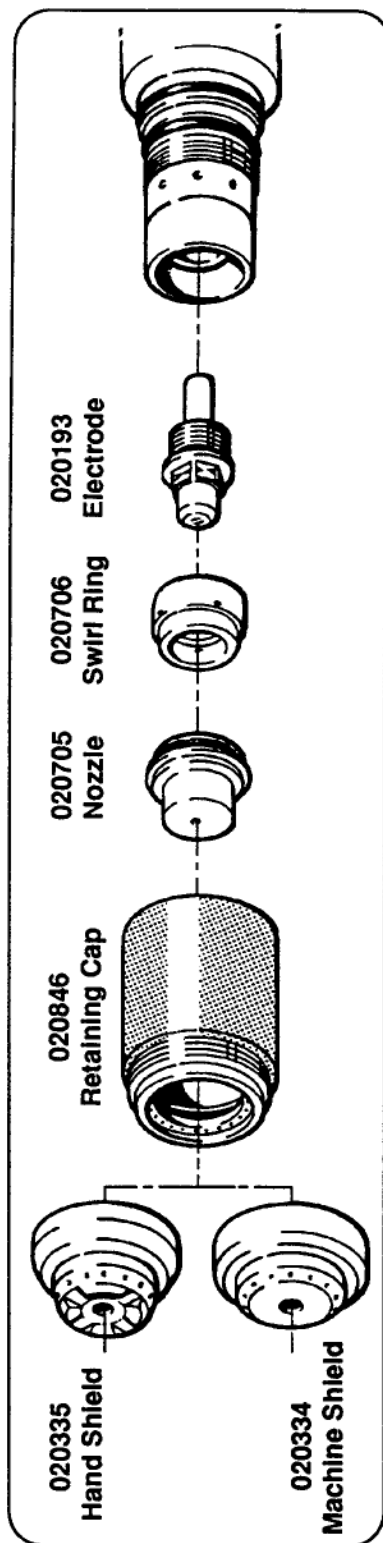
Shield Gas: CO₂

Current Setting: 100 Amps



CUTTING

This gas combination is used when cut edge quality and surface nitriding are less important. Electrode life is extended when this combination is used.



Material Thickness (Inches) (mm)	Plasma Gas Pressure		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Approx. Motion Delay Time (sec)	Plasma Gas (N ₂) Inlet Pressure (psi)	Shield Gas (CO ₂) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Arc Current Setting (amps)	Arc Voltage Setting (volts)			
1/4	50	85†	60	1/8	3	100	1.0	100†	100
3/8							1.0		
1/2							1.2		
5/8							1.5		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch

Extended Consumables Mild Steel Cutting

Plasma Gas: Air

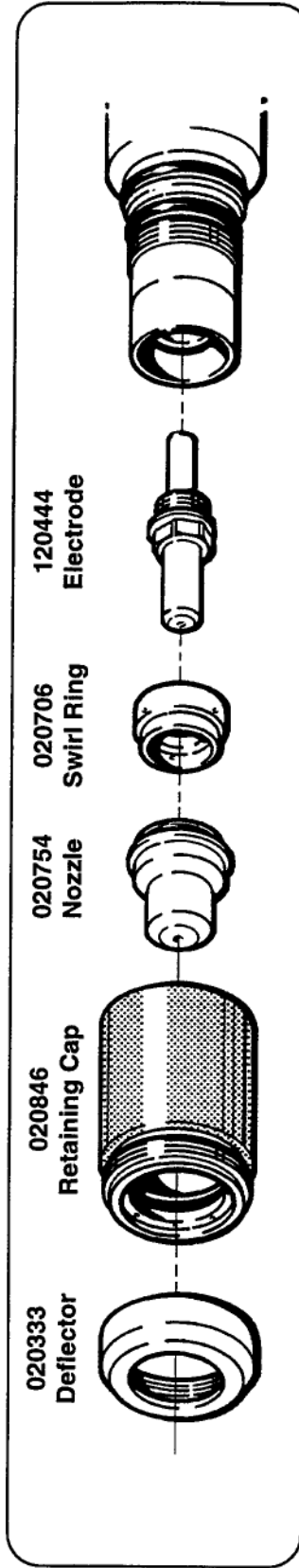
Shield Gas: Air

Current Setting: 100 Amp



CUTTING

This gas combination gives good cut speed, low dross levels and is very economical. Some surface nitriding can occur. The extended consumables allow the user greater accessibility for some cutting applications.



Material Thickness (Inches) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)	Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)								Pressure (psi)	Pressure (psi)	
1/8	50	80†	60	1/8	3	100	80	180	0.5	100†	100	
1/4								125	0.8			
3/8								90	1.0			
1/2								50	1.2			
5/8								35	1.5			
3/4*								22				
1*								14				
1-1/4*								10				
32*												

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

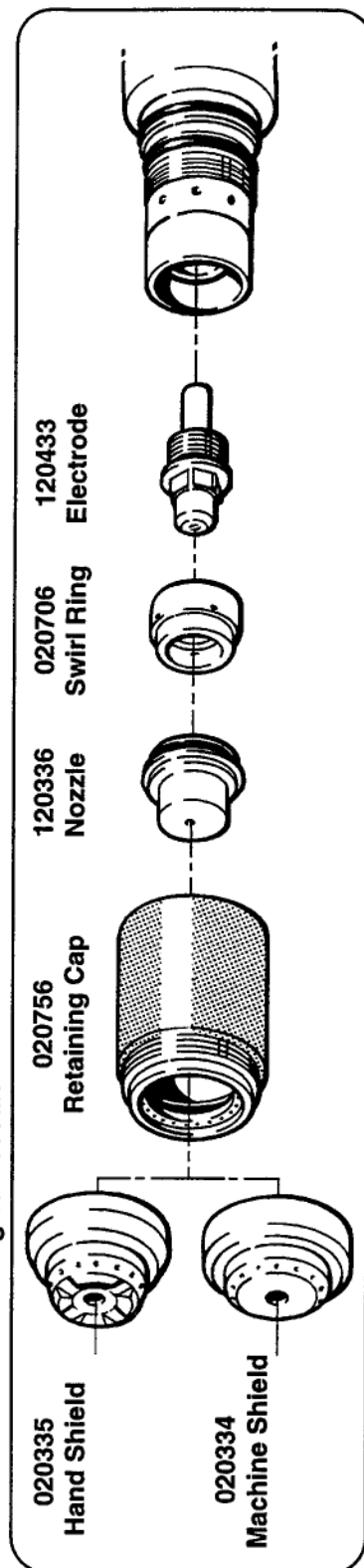
Mild Steel Cutting

Plasma Gas: Air

Shield Gas: Air

Current Setting: 60 Amp

This gas combination gives good cut speed, low dross levels and is very economical. Some surface nitriding can occur.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Delay Time (sec)						
20/.036	50	75†	60	1/16	1.5	60	120	100	300	0.5	100†	100
18/.050							120		300	0.5		
16/.060							125		300	0.5		
14/.075							130		240	0.5		
12/.105							130		200	0.5		
10/.125							130		175	0.5		
10/.135							130		170	0.6		
10/.250							135		55	0.8		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

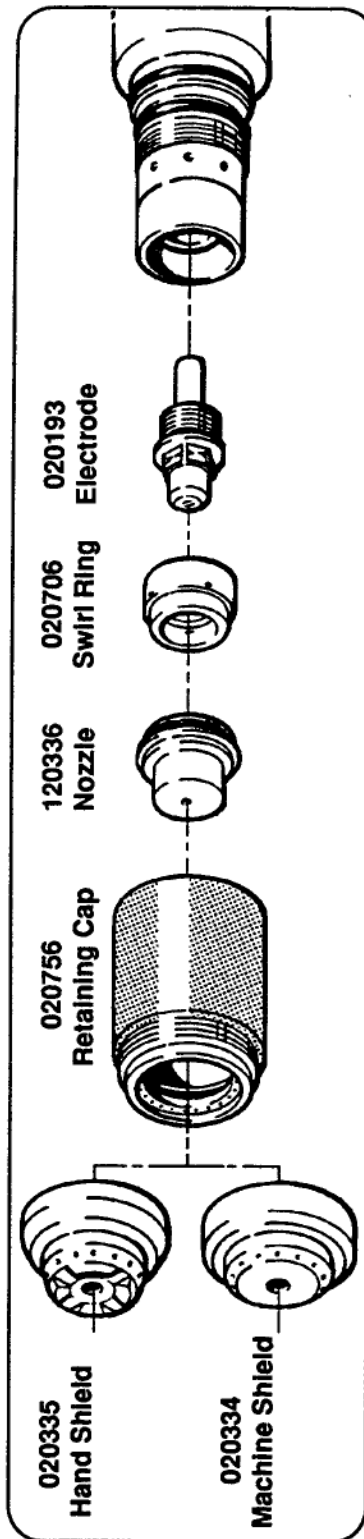
Mild Steel Cutting

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 60 Amp

This gas combination is used when cut edge quality and surface nitriding are less important.
Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Plasma Gas (N ₂) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Delay Time (sec)							
20/.036 1	50	75†	60	1/16	1.5	60	125	100	300	7620	0.5	100†	100
18/.050 1.3							125		300	7620	0.5		
16/.060 1.5							125		300	7620	0.5		
14/.075 2							130		210	5334	0.5		
12/.105 2.5							130		140	3556	0.5		
10/.125 3							135		120	3048	0.5		
10/.135 3.5							135		85	2159	0.6		
.250 6							145		30	762	0.8		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch

Mild Steel Cutting

Plasma Gas: N₂

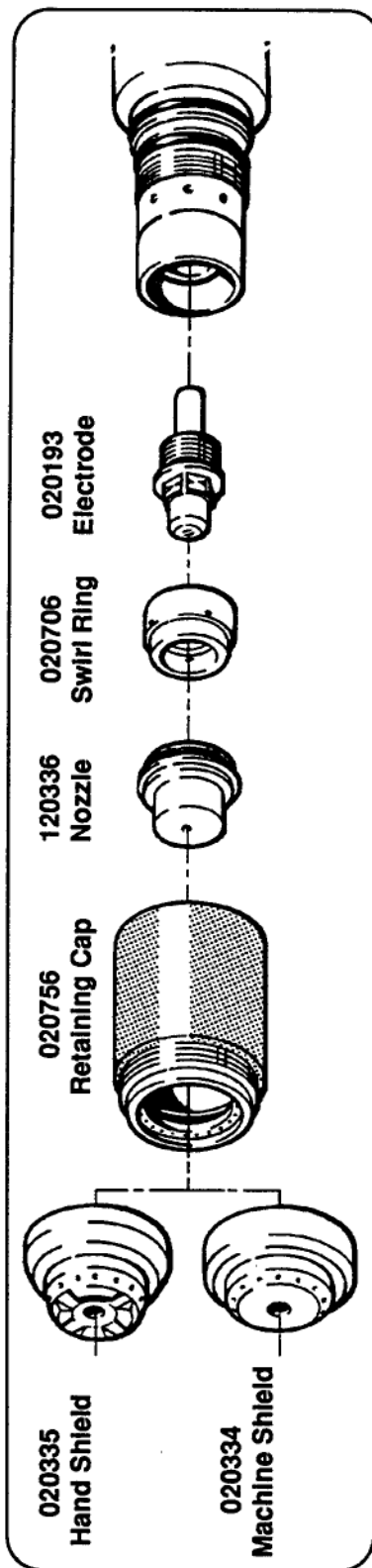
Shield Gas: CO₂

Current Setting: 60 Amps



CUTTING

This gas combination is used when cut edge quality and surface nitriding are less important. Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure Nitrogen		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas Inlet Pressure (psi)		Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Setting (volts)					(N ₂) Inlet Pressure (psi)	(CO ₂) Inlet Pressure (psi)	
20/.036 1	50	75†	60	1/16	1.5	60	125	100	300	0.5	100†	100	100
18/.050 1.3							125		300	0.5			
16/.060 1.5							125		300	0.5			
14/.075 2							130		210	0.5			
12/.105 2.5							130		160	0.5			
/.125 3							135		120	0.8			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

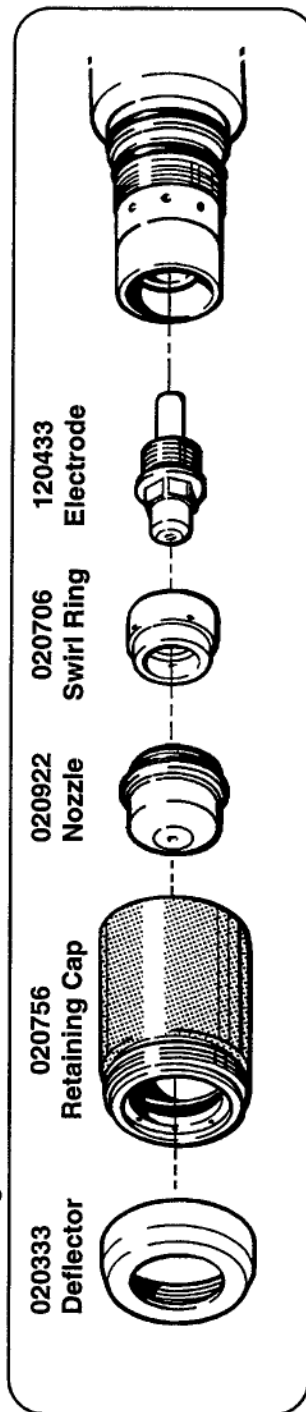
Mild Steel Cutting - Unshielded Parts

Plasma Gas: Air

Shield Gas: Air

Current Setting: 60 Amp

This gas combination gives good cut speed, low dross levels and is very economical. Some surface nitriding can occur.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)	Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)									
20/.036	40	80†	60	1/8	3	60	110	100	400	10160	100†
18/.050							115		340	8636	
16/.060							120		300	7620	
14/.075							120		240	6096	
12/.105							125		200	5080	
10/.125							125		150	3810	
10/.135							125		140	3556	
10/.250							130		65	1651	

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

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MAX100D Machine/PAC160 Hand Torch

Stainless Steel Cutting

Plasma Gas: N₂

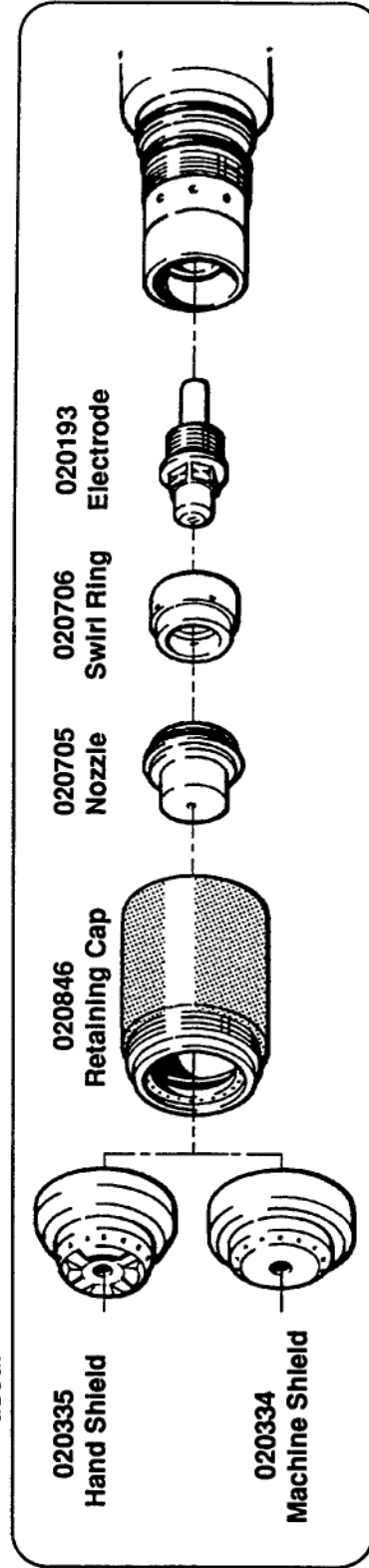
Shield Gas: Air

Current Setting: 100 Amps



CUTTING

This gas combination is used when cut edge quality, surface nitriding and surface oxidation of alloying elements are less important. Electrode life is extended when this combination is used.



Material Thickness (GA/In) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (N ₂) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)			Current Setting (amps)	Pressure (psi)					Pressure (psi)	Pressure (psi)		
16/.060	50	80†	60	1/8	3	100	130	80	220	5588	0.2	100†	100	100
12/.105							140		165	4191	0.5			
/.188							145		70	1778	0.8			
/.250							150		55	1397	0.8			
/.375							150		40	1016	1.0			
/.500							155		30	762	1.2			
/.625							155		22	559				
/.750*							155		22	559				
/.100*							165		11	279				

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

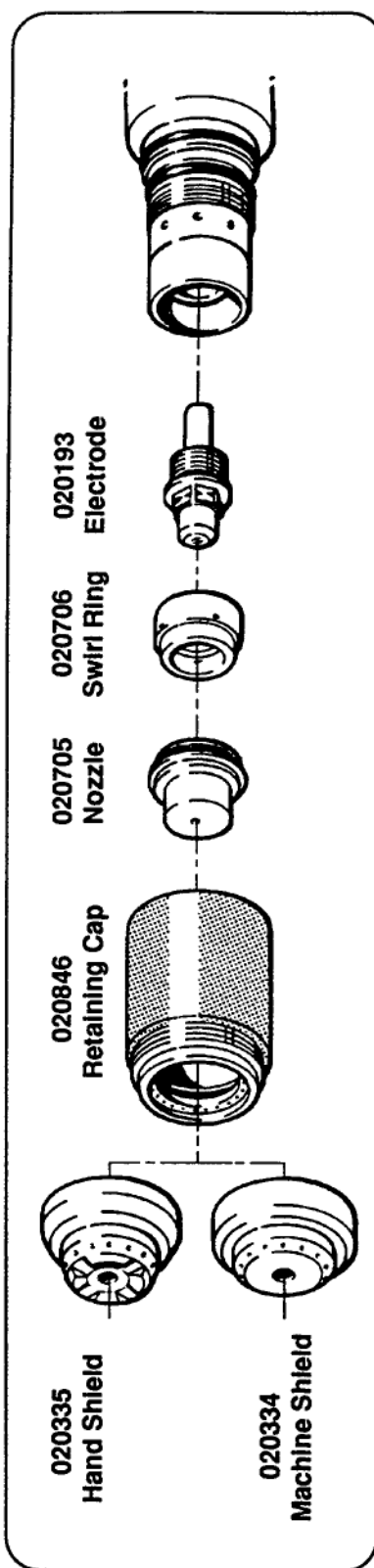
Stainless Steel Cutting

Plasma Gas: N₂

Shield Gas: CO₂

Current Setting: 100 Amps

This gas combination is used when surface nitriding and surface oxidation of alloying elements is less important. Electrode life is extended when using this gas combination.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (inches) (mm)	Arc		Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Delay Time (sec)	Plasma Gas Inlet Pressure (psi)		Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Voltage Setting (volts)				(N ₂)	(CO ₂)	
16/.060 1.5	50	85†	60	1/8 3	100	125	80	220 5588	0.2	100†		100
12/.105 2.5						140		170 4318	0.5			
/.188 4						145		70 1778	1.0			
/.250 6						150		55 1397	1.0			
/.375 9						150		40 1016	1.0			
/.500 12						155		30 762	1.5			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

Stainless Steel Cutting

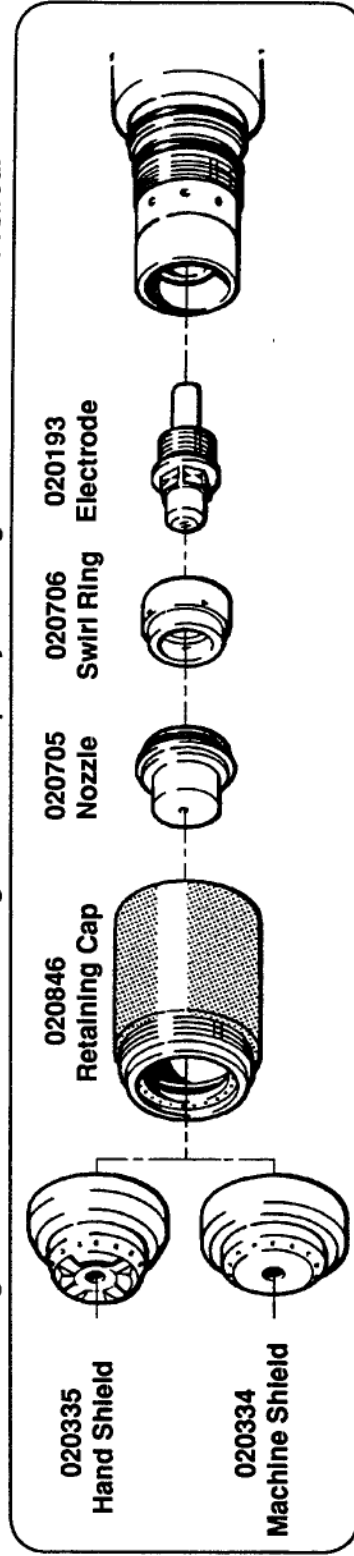
Plasma Gas: H35-N₂

Shield Gas: N₂

Current Setting: 100 Amps

Dual Gas Mixer (#059123) required

This gas combination is used when good surface quality and long consumable life are desired.



Material Thickness (in.) (mm)	Plasma Gas Mix		Shield Gas (N ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Dual Gas Mixer (H35&N ₂) Inlet Pressures (psi)		Shield Gas (N ₂) Inlet Pressure (psi)
	H35 GAS1*	N ₂ GAS2*											
1/8 3	10	90	60	1/8 3	100	150	80	135	3429	0.5	100	100	100
.188 4	20	80				150		100	2540	0.5			
1/4 6	60	40				150		65	1651	1.0			
3/8 9	80	20				155		40	1016	1.5			
1/2 12	90	10				155		30	762	1.5			
5/8 15	90	10				160		30	762	2.0			

- Note:**
- To get good cut quality, dynamic (flowing) input pressure to Dual Gas Mixer should be equal (100 psi).
 - When cutting stainless steel with the H35-N₂ mixture, dress may form on the bottom of the cut if the N₂ flow rate is too low.
 - When the Dual Gas Mixer is properly set, the plasma gas pressure gauge on the gas console should read approximately 55 psi.

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

* Align flowmeter scale with middle of flowmeter float ball when setting mix ratios.

* Full scale = 100. Flow rate at full scale (100) of the flow meter is about 75 scfh (2123 liters/hour).

MAX100D Machine/PAC160 Hand Torch



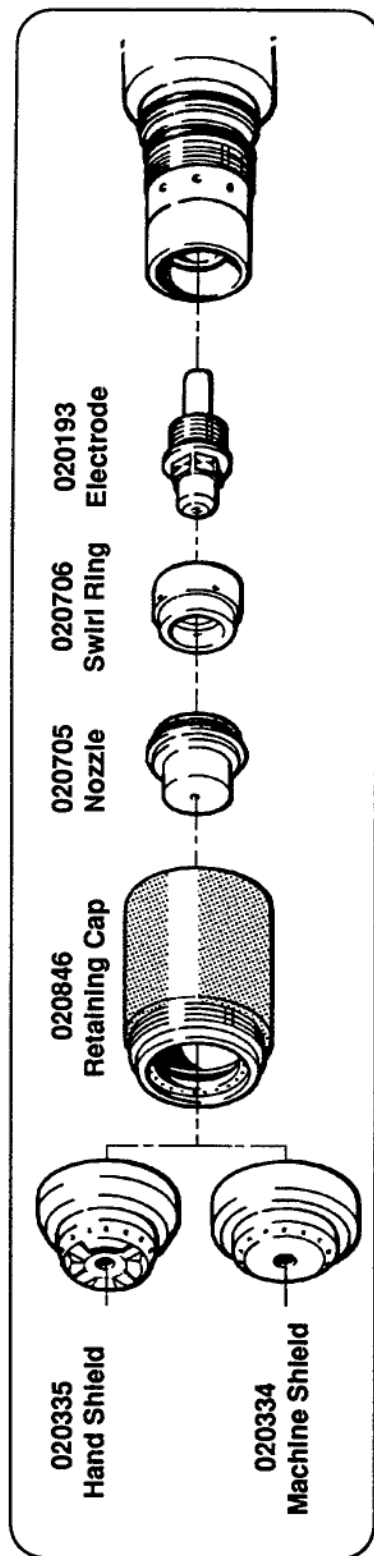
CUTTING

Stainless Steel Cutting

Plasma Gas: H35

Shield Gas: N₂

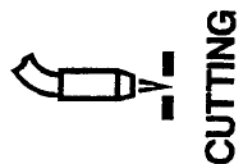
Current Setting: 100 Amps



Material Thickness (in) (mm)	Plasma Gas Pressure H35		Shield Gas (N ₂) Pressure (psi)	Torch-to-work Distance (inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)		Plasma Gas Inlet Pressure (psi)	Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)								
3/8 9	50	75†	60	1/8 3	100	155	80	40	1016	1.5	100†	100	
1/2 12						155		30	762	1.5			
5/8 15						160		30	762	2.0			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



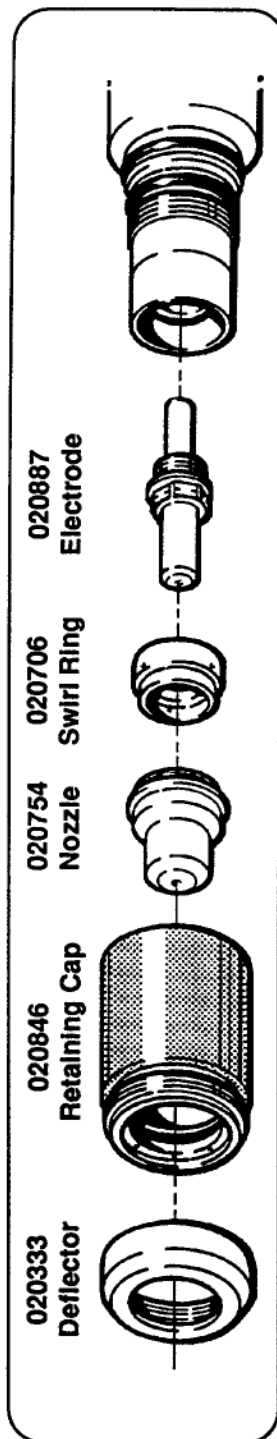
Extended Consumables Stainless Steel Cutting

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 100 Amps

This gas combination is used when cut edge quality, surface nitriding and surface oxidation of alloying elements are less important. Electrode life is increased when this combination is used. The extended consumables allow the user greater accessibility for some cutting applications.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (N ₂) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)											
12/105	50	80†	60	1/8	3	100	130	80	175	0.5	100†	100	100
10/135							130		160	0.5			
1/188							135		80	0.8			
1/250							135		60	0.8			
1/375							140		40	1.0			
1/500							145		35	1.2			
1/625							150		18	1.5			
1/750*							155		15				
1/1.00*							160		10				

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

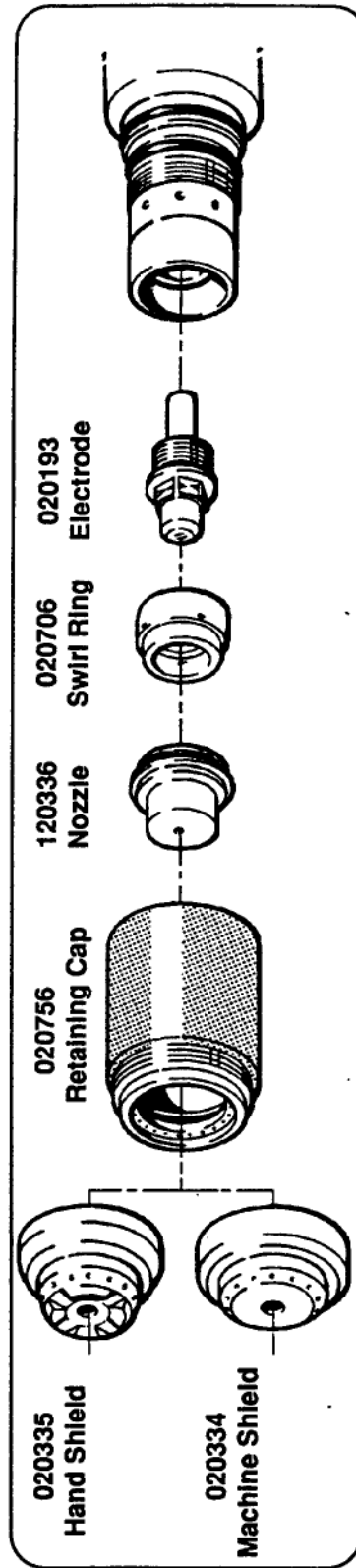
Stainless Steel Cutting

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 60 Amps

This gas combination is used when cut edge quality, surface nitriding and surface oxidation of alloying elements are less important. Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure Nitrogen		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas Inlet Pressure (psi)		Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)											
20/.036 1	50	75†	60	1/16	1.5	60	125	100	300	7620	0.5	100†	100
16/.060 1.5							125		300	7620	0.5		
14/.075 2							130		240	6096	0.5		
12/.105 2.5							130		180	4572	0.5		
/.125 3							140		150	3810	1.0		
/.188 4							145		65	1651	1.0		
/.250 6							150		45	1143	1.0		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

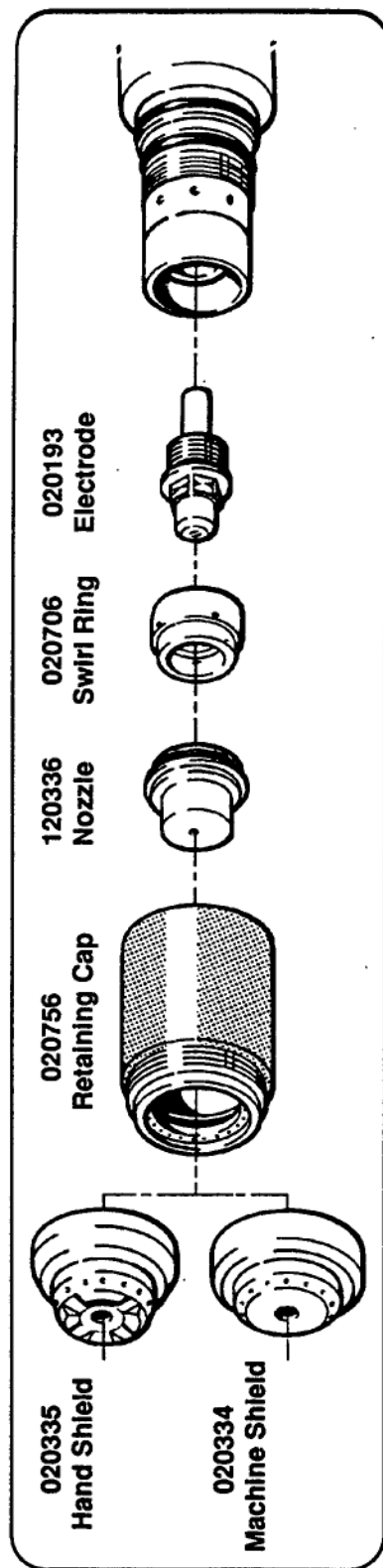
Stainless Steel Cutting

Plasma Gas: N₂

Shield Gas: CO₂

Current Setting: 60 Amps

This gas combination is used when surface nitriding and surface oxidation of alloying elements is less important. Electrode life is extended when using this gas combination.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas Shield Gas Inlet (N ₂) Inlet (CO ₂) Pressure (psi)	
	TEST (psi)	RUN (psi)			Current Setting (amps)	Setting (amps)						
20/.036 1	50	75†	60	1/16	1.5	60	125	100	360	9144	0.5	100†
16/.060 1.5							125		360	9144	0.5	
14/.075 2							130		240	6096	0.5	
12/.105 2.5							130		150	3810	0.8	
1/.125 3							135		120	3048	1.0	
1/.188 4							140		55	1397	1.0	

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

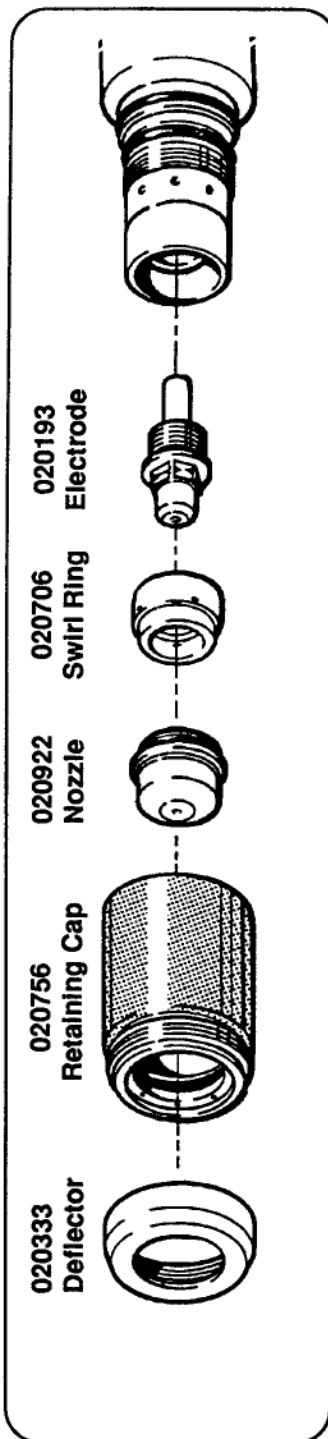
Stainless Steel Cutting - Unshielded Parts

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 60 Amps

This gas combination is used when cut edge quality, surface nitriding and surface oxidation of alloying elements are less important. Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)					Delay Time (sec)		
18/.050	40	80†	60	1/8	3	60	120	100	360	0.2	100†	100
16/.060							120		300	0.2		
14/.075							125		240	0.5		
12/.105							125		180	0.5		
1/.125							135		140	1.0		
1/.188							140		60	1.0		
1/.250							145		40	1.0		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

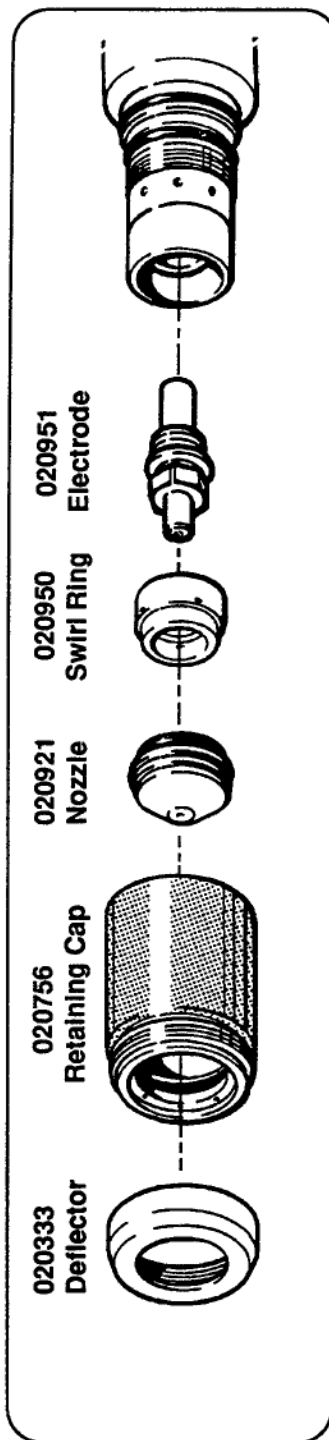
Stainless Steel Cutting*

Plasma Gas: Air

Shield Gas: Air

Current Setting: 30/40 Amps

This gas combination is used when cut edge quality, surface nitriding and surface oxidation of alloying elements are less important.



Material Thickness (GA/In) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)	Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)		
	TEST (psi)	RUN (psi)											
26/.018 0.5	40	60†	60	.020	0.5	30**	65-75***	100	250	6350	0	100†	100
24/.024 0.6						30**			230	5842	0		
22/.030 0.7						30**			220	5588	0		
20/.036 0.9						30**			200	5080	0		
18/.048 1.2						40			150	3810	0.1		
16/.060 1.5						40			120	3048	0.1		

* Some stainless steel plate comes with a plastic film attached to it. Because of the close torch-to-work distance required for 30/40 amp cutting, this film must be removed before cutting begins.

** Turn **AMPS** knob totally counterclockwise for 30 Amp setting

*** To maintain the .020 (0.5 mm) Torch-to-work Distance as the electrode wears, increase arc voltage in this range to avoid having the torch dive into the plate.

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

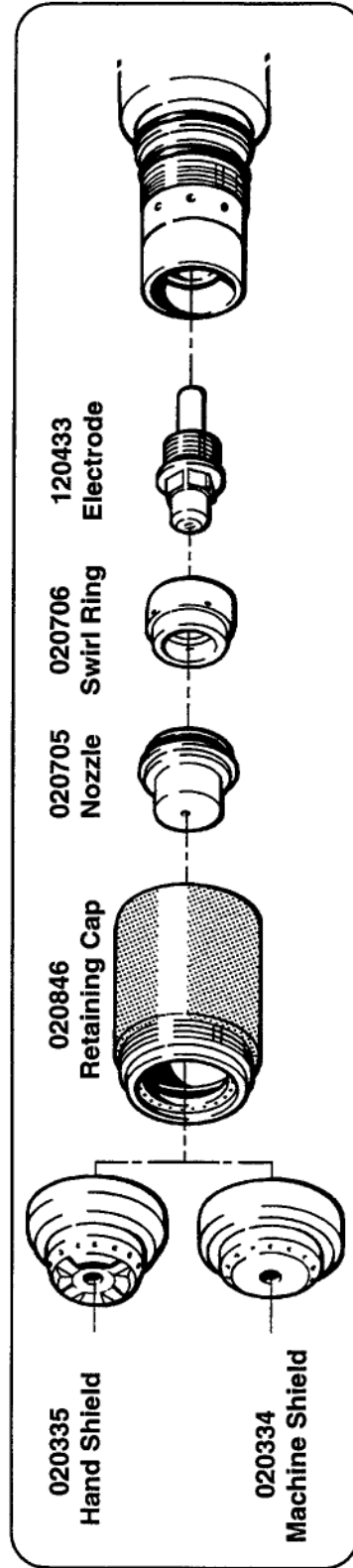
Aluminum Cutting

Plasma Gas: Air

Shield Gas: Air

Current Setting: 100 Amp

This gas combination gives good cut speed, low dross levels and is very economical.



Material Thickness (inches) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Delay Time (sec)						
1/4	50	75†	60	1/8	3	100	140	80	95	2413	0.8	100
3/8							140		70	1778	1.0	
1/2							145		55	1397	1.2	
5/8							150		45	1143	1.5	
3/4*							155		33	838		
1*							160		22	559		
1-1/4*							170		11	279		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

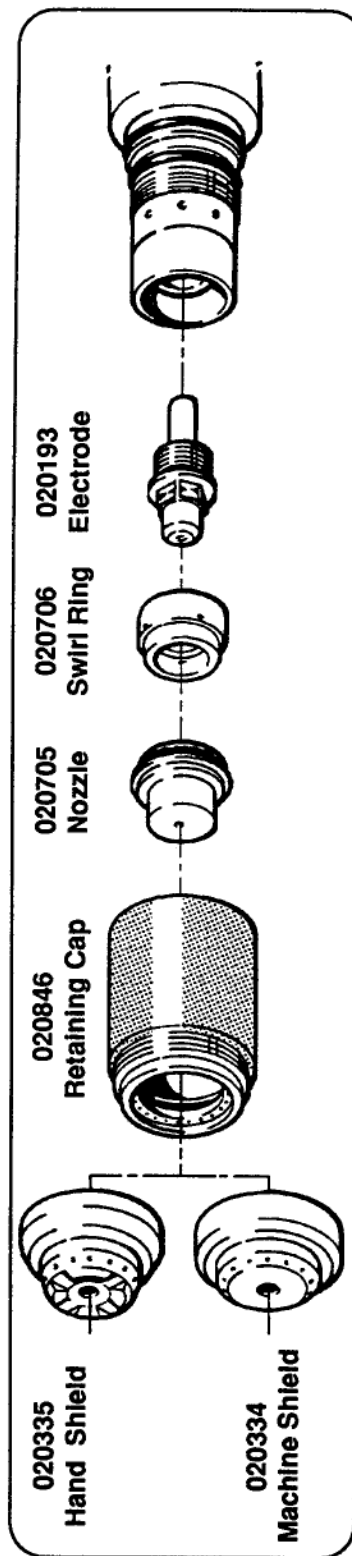
Aluminum Cutting

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 100 Amp

This gas combination is used when cut edge quality is less important. Electrode life is extended when this combination is used.



Material Thickness (Inches) (mm)	Plasma Gas Pressure Nitrogen		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)		Arc Voltage Setting (volts)		Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas Inlet Pressure (psi)		Shield Gas Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)													
1/4	50	86†	60	1/8	3	100	145	80	95	2413	1.0	100†	100		
3/8							150		70	1778	1.0				
1/2							155		55	1397	1.5				
5/8							155		45	1143	1.5				
3/4*							160		35	889					
1*							165		22	559					
1-1/4*							175		11	279					

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

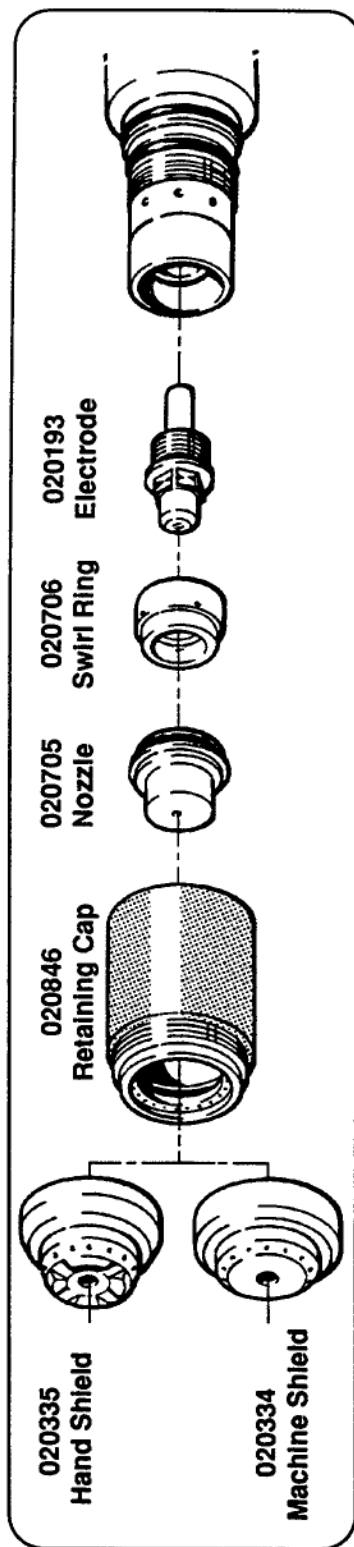
Aluminum Cutting

Plasma Gas: N₂

Shield Gas: CO₂

Current Setting: 100 Amps

This gas combination is used when cut edge quality is less important. Electrode life is extended when this combination is used.



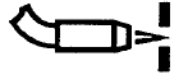
Material Thickness (Inches) (mm)	Plasma Gas Pressure		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Plasma Gas Inlet Pressure (psi)	Shield Gas Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Delay Time (sec)							
1/4	50	85†	60	1/8	3	100	145	80	95	2413	0.8	100†	100
3/8							145		70	1778	1.0		
1/2							150		55	1397	1.2		
5/8							155		45	1143	1.5		
3/4* 19*							160		35	889			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

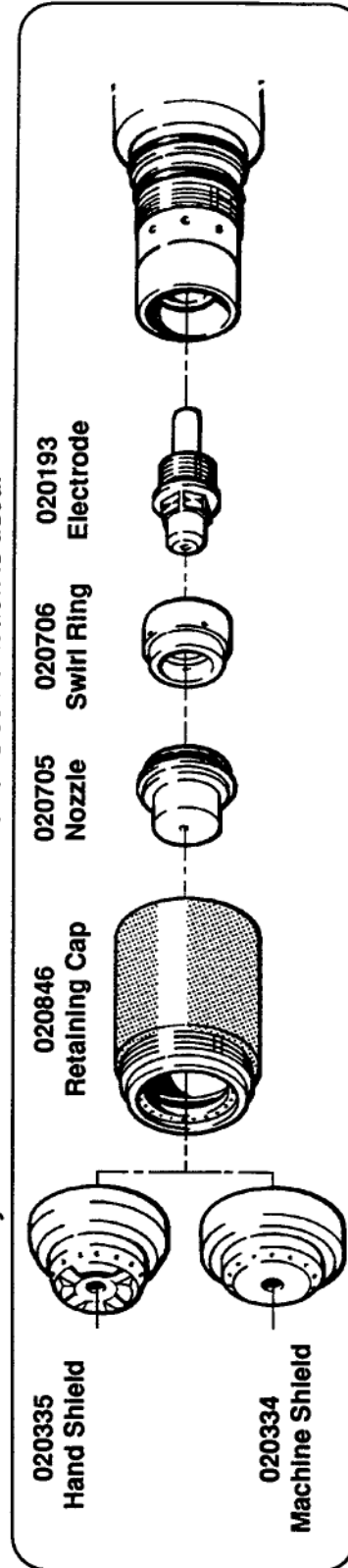
Aluminum Cutting

Plasma Gas: H35

Shield Gas: Air

Current Setting: 100 Amp

This gas combination (Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas) gives maximum thickness cutting capability, good cut quality and weldability. Electrode life is extended when this combination is used.



Material Thickness (Inches) (mm)	Plasma Gas Pressure H35		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (H35) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)							
1/4	50	80†	60	1/8	3	100	130	80	95	2413	100†	100
3/8							130		70	1778		
1/2							135		55	1397		
5/8							135		45	1143		
3/4*							140		35	889		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

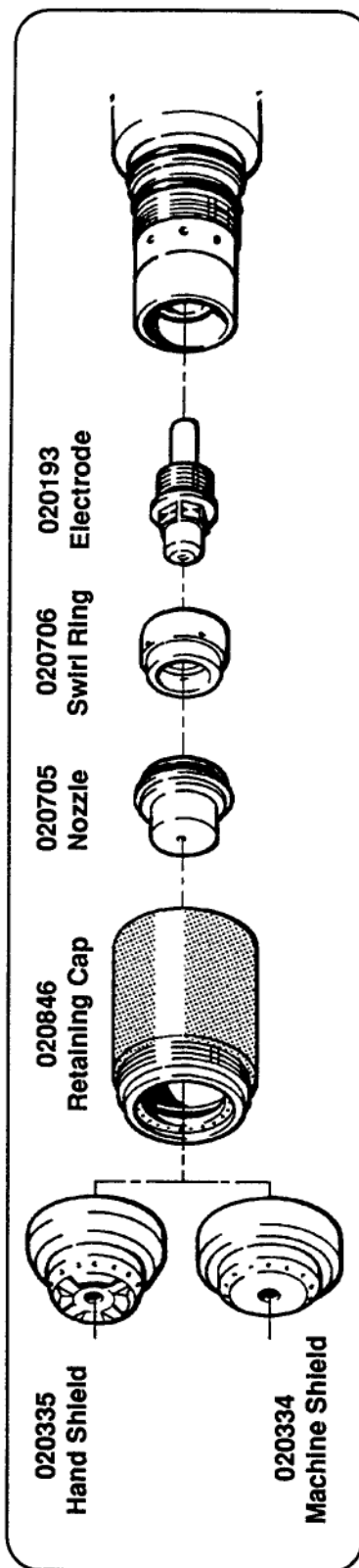
Aluminum Cutting

Plasma Gas: H35

Shield Gas: N₂

Current Setting: 100 Amp

This gas combination (Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas) gives maximum thickness cutting capability, excellent cut quality and excellent weldability. Electrode life is extended when this combination is used.



Material Thickness (Inches) (mm)	Plasma Gas Pressure		Shield Gas (N ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)	Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas (N ₂) Inlet Pressure (psi)
	H35 (psi)	RUN (psi)							Delay Time (sec)	(H35) Inlet Pressure (psi)	
1/4	50	80†	60	1/8	3	100	80	95	2413	0.8	100†
3/8								70	1778	1.0	
1/2								55	1397	1.2	
5/8								45	1143	1.5	
3/4*								35	889		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch

Extended Consumables

Aluminum Cutting

Plasma Gas: Air

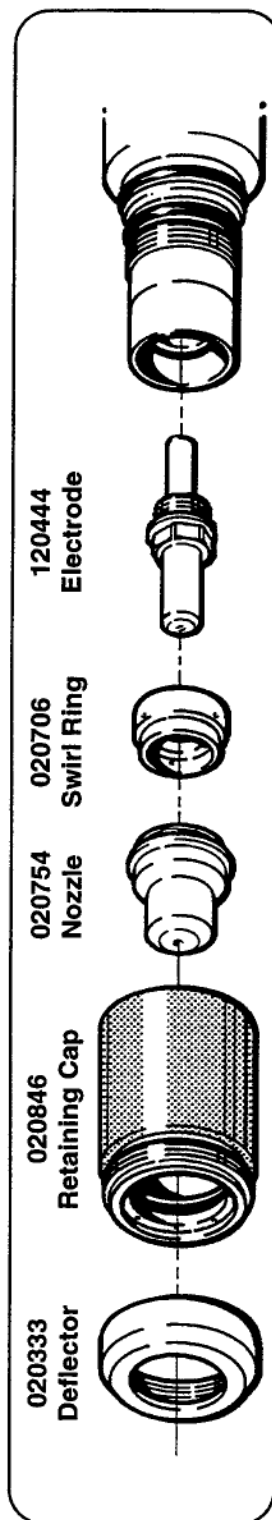
Shield Gas: Air

Current Setting: 100 Amp



CUTTING

This gas combination gives good cut speed, low dross levels and is very economical. The extended consumables allow the user greater accessibility for some cutting applications.



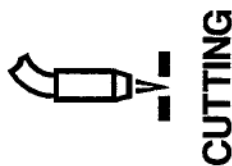
Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Voltage Setting (volts)			Delay Time (sec)	Pressure (psi)	
16/.060	50	80†	60	1/8	3	100	130	175	0.2	100†	100
14/.075							130	160	0.2		
12/.105							130	145	0.5		
10/.125							130	145	0.5		
10/.135							135	135	0.5		
10/.188							135	125	0.8		
12/.250							135	115	0.8		
14/.375							140	90	1.0		
16/.500							140	60	1.2		
18/.625							145	45	1.5		
19*/.750							145	30			
25*/1.00							155	20			
32*/1.25							160	12			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure

* Piercing not recommended

1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



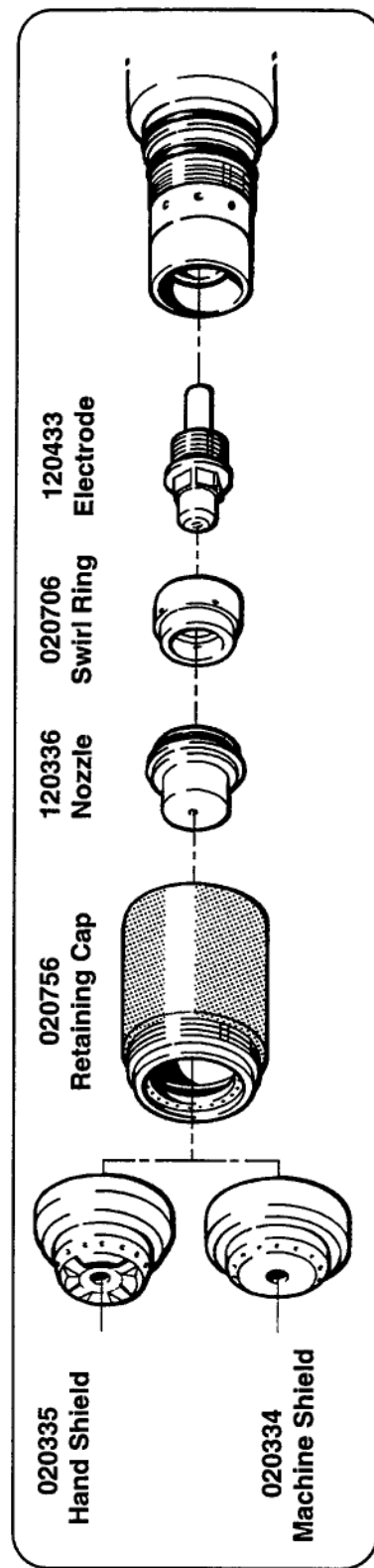
Aluminum Cutting

Plasma Gas: Air

Shield Gas: Air

Current Setting: 60 Amp

This gas combination gives good cut speed, low dross levels and is very economical.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)			Current Setting (amps)							
18/.050 1.3	50	80†	60	1/16	1.5	60	120	100	300	0.5	100†	100
16/.060 1.5							125		240	0.5		
14/.075 2							125		200	0.5		
12/.105 2.5							130		160	0.5		
1/.125 3							130		120	0.8		
1/.250 6							135		90	1.0		

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

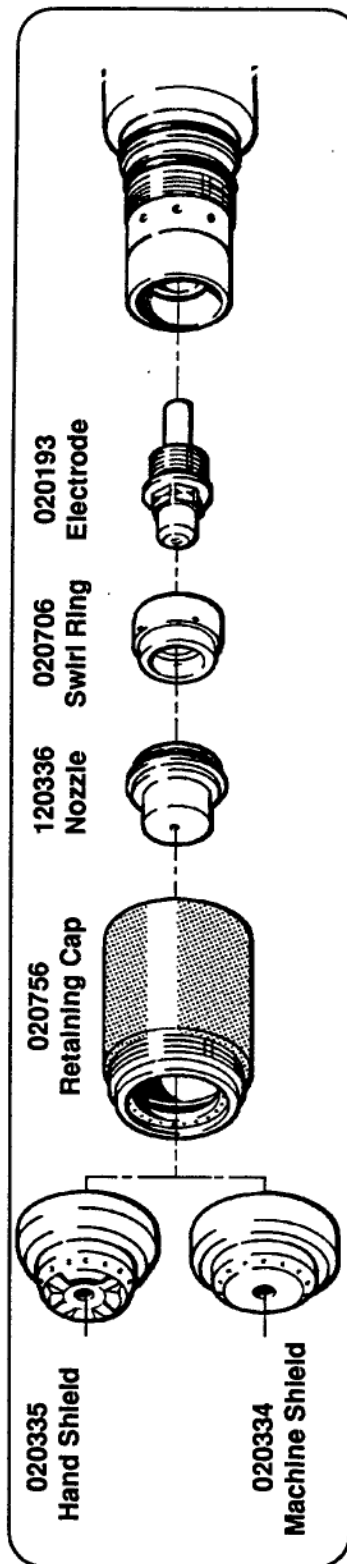
Aluminum Cutting

Plasma Gas: N₂

Shield Gas: Air

Current Setting: 60 Amp

This gas combination is used when cut edge quality is less important. Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (N ₂) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	100†					100		
18/050 1.3	50	85†	60	1/16	1.5	60	125	100	240	0.5	100†	100	
16/060 1.5							125		180	0.5			
14/075 2							135		160	0.5			
12/105 2.5							140		130	0.5			
1/125 3							145		85	0.8			
1/250 6							155		40	1.0			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

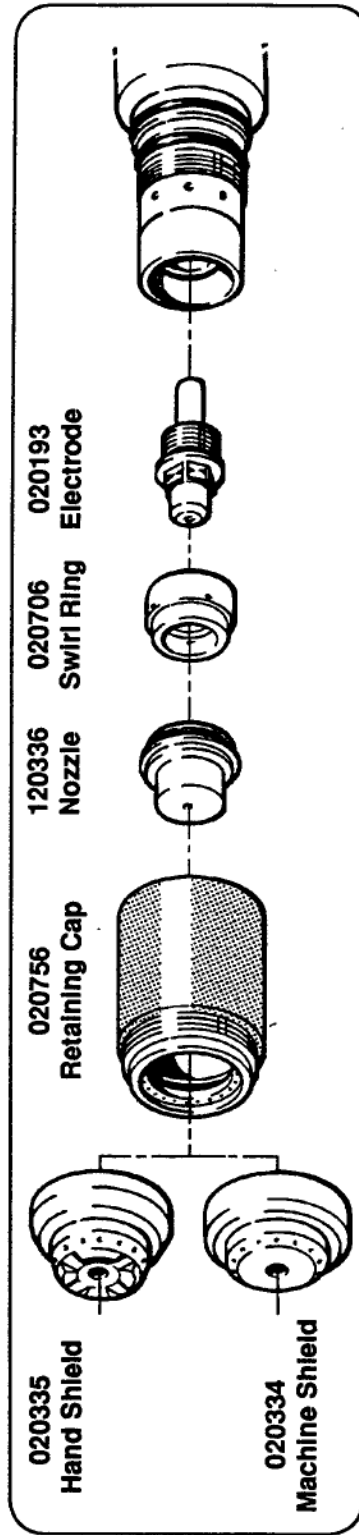
Aluminum Cutting

Plasma Gas: N₂

Shield Gas: CO₂

Current Setting: 60 Amps

This gas combination is used when cut edge quality is less important. Electrode life is extended when this combination is used.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure Nitrogen		Shield Gas (CO ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion		Shield Gas (CO ₂) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Delay Time (sec)				Plasma Gas (N ₂) Inlet Pressure (psi)		
18/.050 1.3	50	85†	60	1/16	1.5	60	125	100	240	6096	0.5	100
16/.060 1.5							125		180	4572	0.5	
14/.075 2							135		160	4064	0.5	
12/.105 2.5							140		130	3302	0.5	
/.125 3							145		85	2159	0.8	
/.250 6							155		40	1016	1.0	

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160 Hand Torch



CUTTING

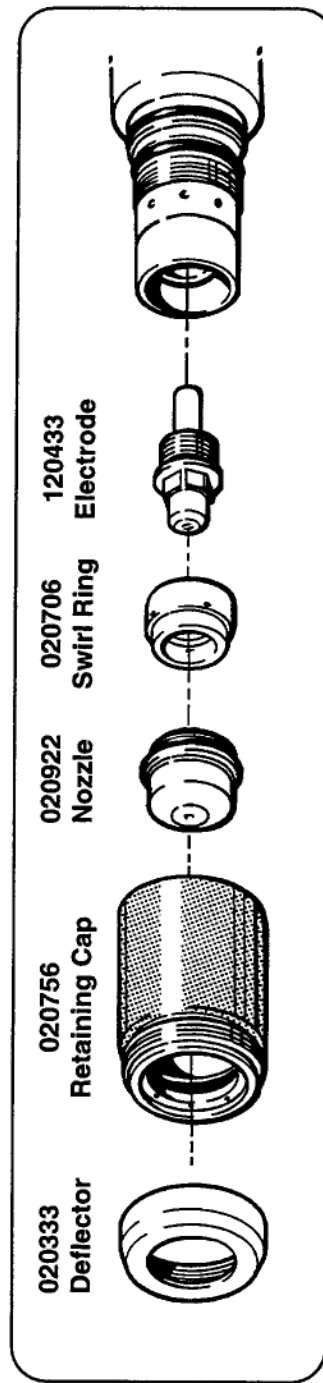
Aluminum Cutting - Unshielded Parts

Plasma Gas: Air

Shield Gas: Air

Current Setting: 60 Amp

This gas combination gives good cut speed, low dross levels and is very economical.



Material Thickness (GA/in) (mm)	Plasma Gas Pressure		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Arc Voltage Setting (volts)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (Air) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)			Current Setting (amps)									
18/.050	40	80†	60	1/8	3	60	115	100	300	7620	0.2	100†	100	
16/.060							120		240	6096	0.2			
14/.075							120		200	5080	0.5			
12/.105							125		160	4064	0.5			
1/.125							125		120	3048	0.8			
1/.250							130		90	2286	1.0			

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

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MAX100D Machine/PAC160E Hand Torch



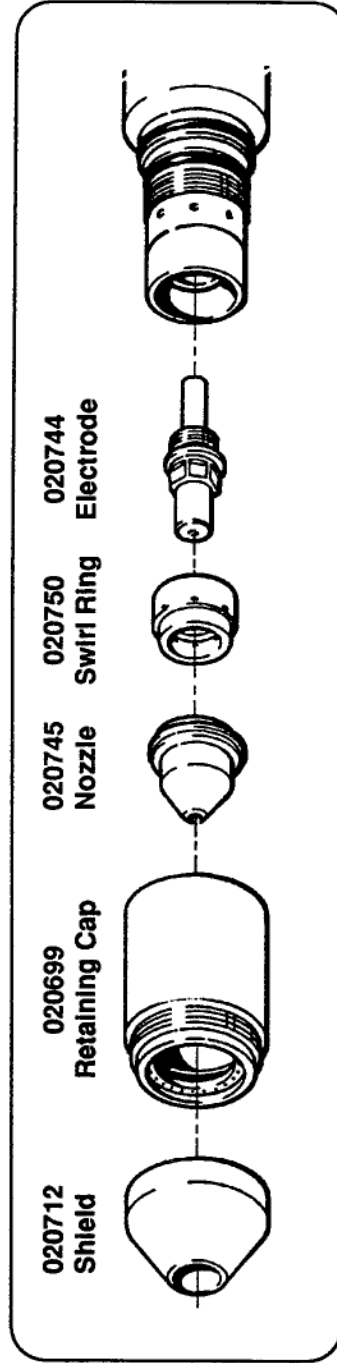
Mild Steel Gouging

Plasma Gas: **Air**

Shield Gas: **Air**

Current Setting: **100 Amps**

This combination is very economical on gas.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure Air		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)		Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)		Plasma Gas (Air) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)										
40°	50	54†	60	1/16 1.5	100	80	15	381	1.0	100†	100	100

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160E Hand Torch

Mild Steel Gouging

Plasma Gas: H35

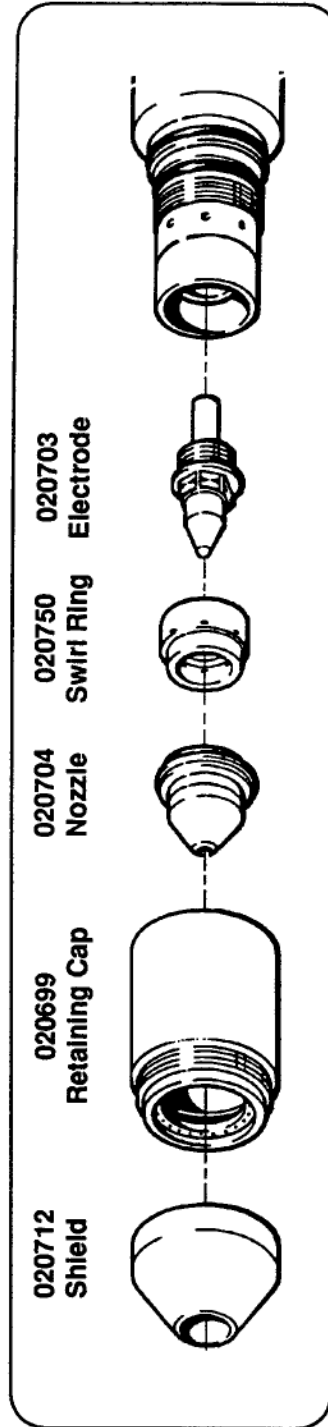
Shield Gas: Air

Current Setting: 100 Amps



GOUGING

Hypertherm recommends a plasma gas mixture of 35% hydrogen, and 65% argon.
This gas combination is highly efficient and yields long consumable life.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure H35		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (inches) (mm)	Arc Current Setting (amps)	Duty Cycle (%)	Travel Speed (ipm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (H35) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)								
40°	50	54†	60	1/8 3	100	80	20 508	1.0	100†	100

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160E Hand Torch

Stainless Steel Gouging

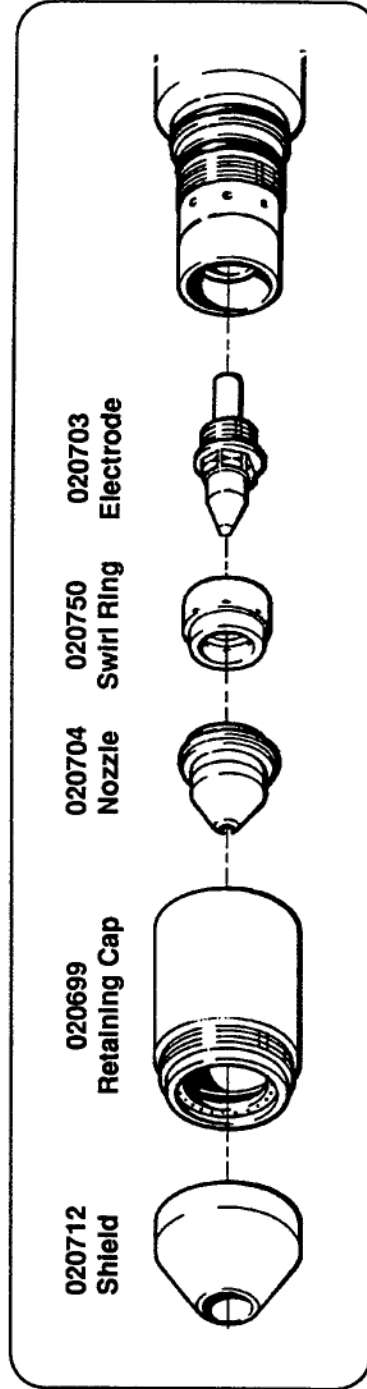
Plasma Gas: H35

Shield Gas: Air

Current Setting: 100 Amps



Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas.
This gas combination is highly efficient and yields long consumable life.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure H35		Shield Gas (Air) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc		Travel Speed (lpm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (H35) Inlet Pressure (psi)	Shield Gas (Air) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)			Current Setting (amps)	Duty Cycle (%)				
40°	50	54†	60	1/8 3	100	80	20 508	1.0	100†	100

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160E Hand Torch

Stainless Steel Gouging

Plasma Gas: H35

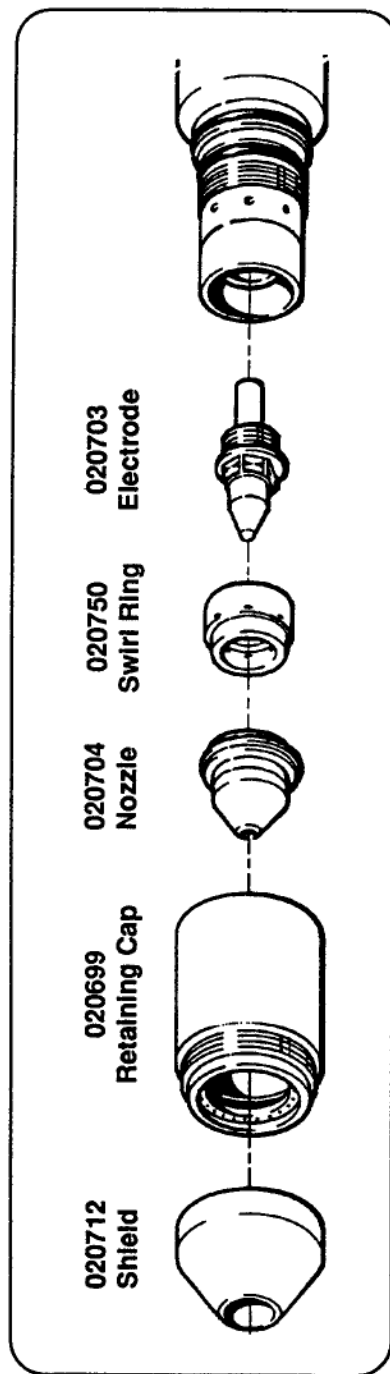
Shield Gas: N₂

Current Setting: 100 Amps



GOUGING

Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas. This gas combination is highly efficient, yields long consumable life, and leaves a superior work surface.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure H35		Shield Gas (N ₂) Pressure (psi)	Torch-to-work Distance (Inches) (mm)	Arc Current Setting (amps)	Duty Cycle (%)	Travel Speed (lpm) (mm/min)	Approx. Motion Delay Time (sec)	Plasma Gas (H35) Inlet Pressure (psi)	Shield Gas (N ₂) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)								
40°	50	54†	60	1/8 3	100	80	20 508	1.0	100†	100

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160E Hand Torch

Aluminum Gouging

Plasma Gas: H35

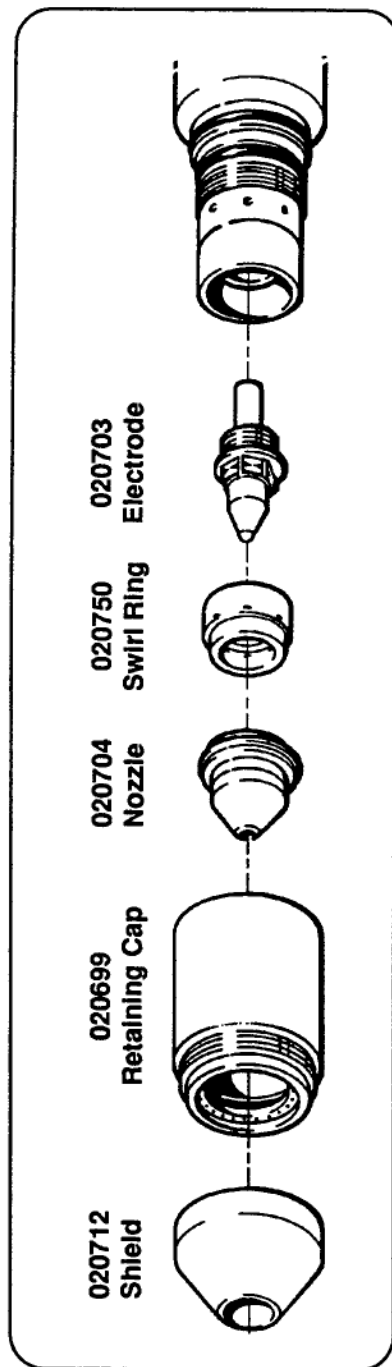
Shield Gas: Air

Current Setting: 100 Amps



GOUGING

Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas.
This gas combination is highly efficient and yields long consumable life.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure H35		Shield Gas (Air) Pressure (psi)		Torch-to-work Distance (inches) (mm)		Arc Current Setting (amps)		Duty Cycle (%)		Travel Speed (ipm) (mm/min)		Approx. Motion Delay Time (sec)		Plasma Gas (H35) Inlet Pressure (psi)		Shield Gas (Air) Inlet Pressure (psi)	
	TEST (psi)	RUN (psi)																
40°	50	54†	60		1/8 3		100		80		20 508		1.0		100†		100	

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa

MAX100D Machine/PAC160E Hand Torch

Aluminum Gouging

Plasma Gas: H35

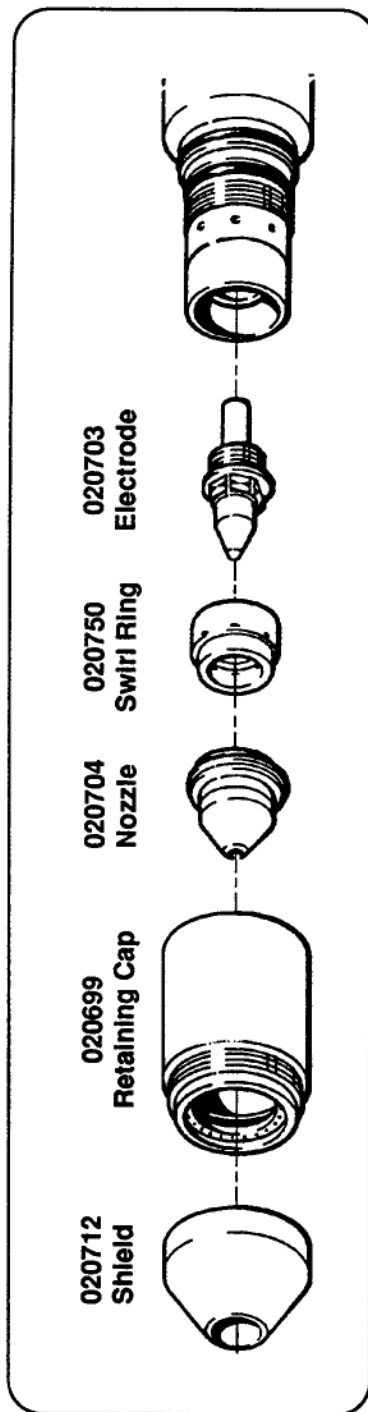
Shield Gas: N₂

Current Setting: 100 Amps



GOUGING

Hypertherm recommends a mixture of 35% hydrogen and 65% argon for the plasma gas. This gas combination is highly efficient, yields long consumable life, and leaves a superior work surface.



Torch-to-work Angle of Inclination θ (Degrees)	Plasma Gas Pressure H35		Shield Gas (N ₂) Pressure (psi)	Torch-to-work Distance (Inches)	Arc Current Setting (amps)	Duty Cycle (%)	Travel Speed (ipm)	Approx. Motion Delay Time (sec)	Plasma Gas (H35) Inlet Pressure (psi)	Shield Gas (N ₂) Inlet Pressure (psi)
	TEST (psi)	RUN (psi)								
40°	50	54†	60	1/8	3	100	80	20	508	100†
								1.0		100

† If RUN pressure is higher than recommended, lower Plasma Gas Inlet Pressure
1 inch = 25.4 mm; 1 psi = .0689 bar = 6.895 KPa