

HyDefinition®

HD-1070

***PAC182 Torch
to PAC186 Torch
Field Upgrade***

***Field Bulletin
802490 - Rev. 1***

HYPERTHERM®

HyDefinition[®]

HD-1070

PAC182 Torch to PAC186 Torch Field Upgrade

**Field Bulletin
IM-249
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PAC182 TO PAC186 TORCH FIELD UPGRADE

INTRODUCTION

This field bulletin describes how to remove the PAC182 torch and replace it with quick disconnect (028855) and PAC186 quick disconnect torch (120349). The consumables used are the same consumables as used for the PAC182 torch with the exception of the new nozzles and electrodes.

Tools required:

9/64-inch Allen Wrench
7/16-inch Wrench
Adjustable Wrench

PROCEDURE

In order to install the new PAC186 quick disconnect torch, the PAC182 torch must be removed. To do this, proceed as follows:



WARNING



Turn off all power to HD-1070 system. Always press the power unit OFF (O) pushbutton switch and set the line disconnect switch to Off. Lock out and tag out switch.

Remove PAC182 Torch

1. Remove PAC182 torch and torch sleeve with off-valve assembly from torch lifting assembly. Loosen off-valve assembly, so that torch sleeve can be unscrewed from torch.
2. Unscrew torch sleeve from torch and slide it back until all the fittings can be accessed for disconnecting torch.

Note: If torch sleeve can not be slid back far enough to access torch fittings, disconnect plasma gas hose, shield gas hose, and plasma bypass vent hose from off-valve assembly outlet fittings. Fig. 1

3. Disconnect hose and pilot arc fittings using wrenches. Always use two wrenches to disconnect fittings. Hold the fittings on the torch end and turn the fittings on the hose ends. Using one wrench can cause major damage to torch. Fig. 2

Install Straight Quick Disconnect and PAC186 Torch

4. Reconnect hose and pilot arc lead fittings, removed in step 3, on to straight quick disconnect. Always use two wrenches to tighten fittings and do not turn fittings on torch end. Fig. 3
5. Slide torch sleeve forward on to quick disconnect, mate threaded ends, and tighten torch sleeve. Do not turn straight quick disconnect.
6. Align PAC186 torch ports to quick disconnect receptacle, then push into place. Turn securing ring clockwise to lock torch into place. Fig. 4

PAC182 TO PAC186 TORCH FIELD UPGRADE

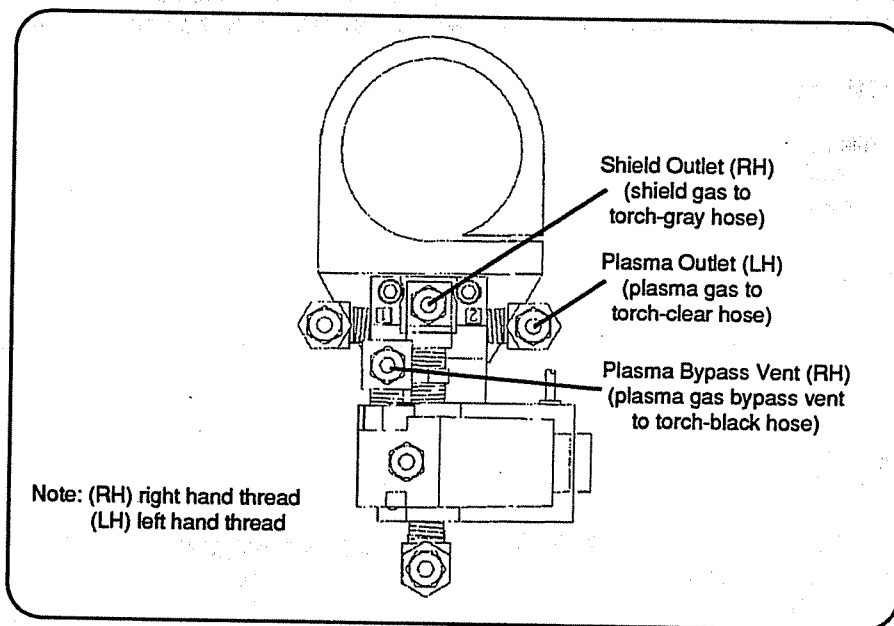


Figure 1 Off-Valve Assembly Hose Connections to Torch

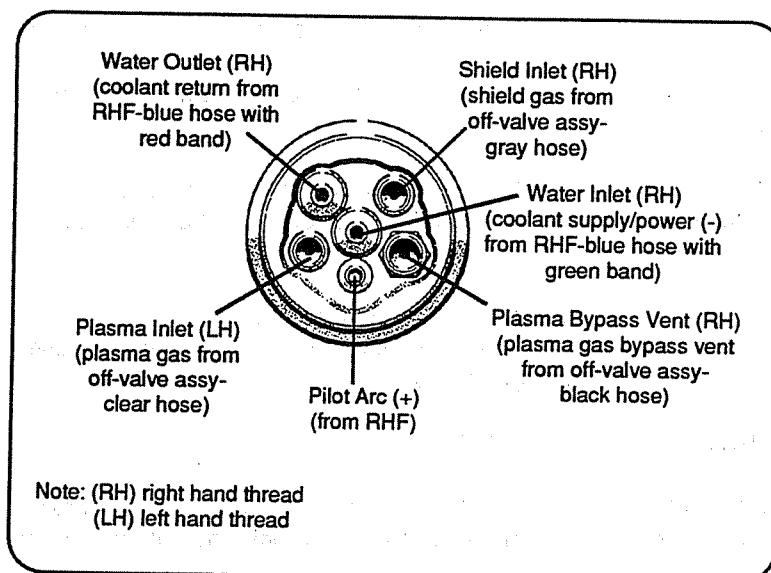


Figure 2 PAC182 Torch Connections

PAC182 TO PAC186 TORCH FIELD UPGRADE

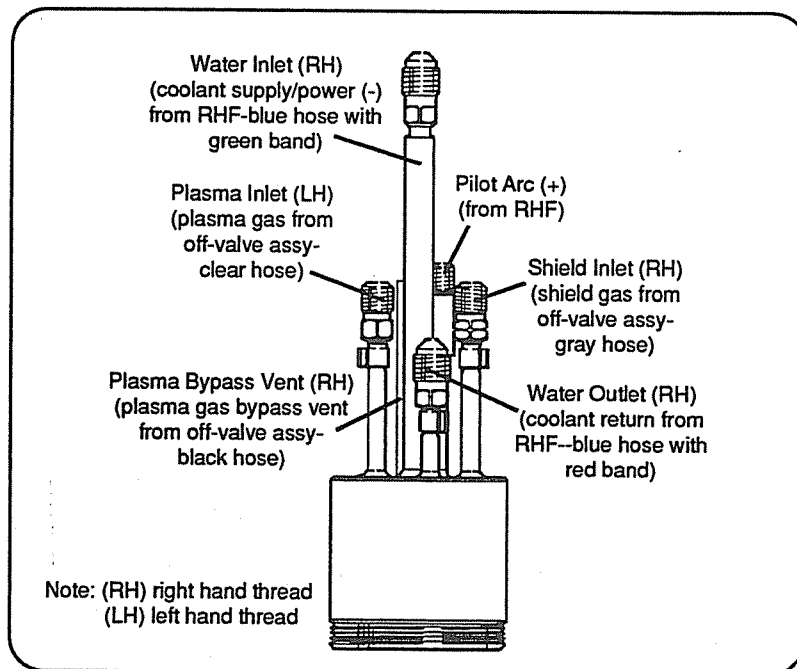


Figure 3 Straight Quick Disconnect Connections

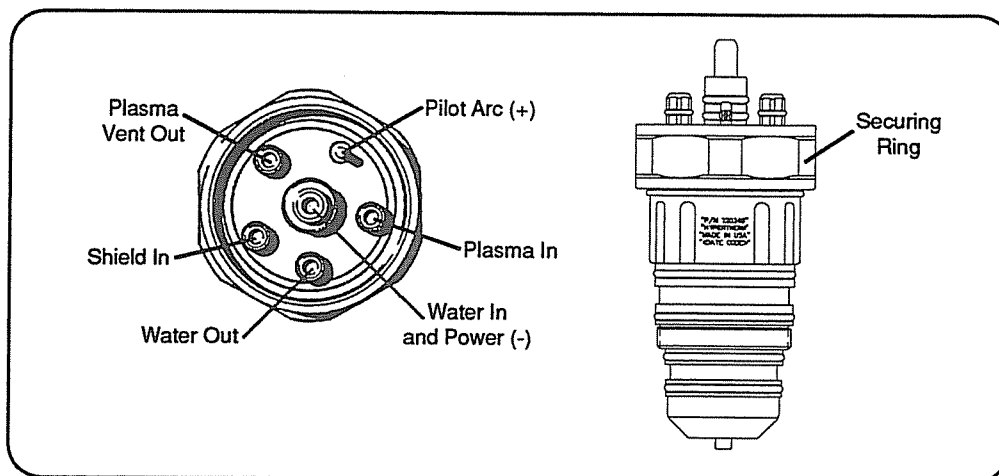
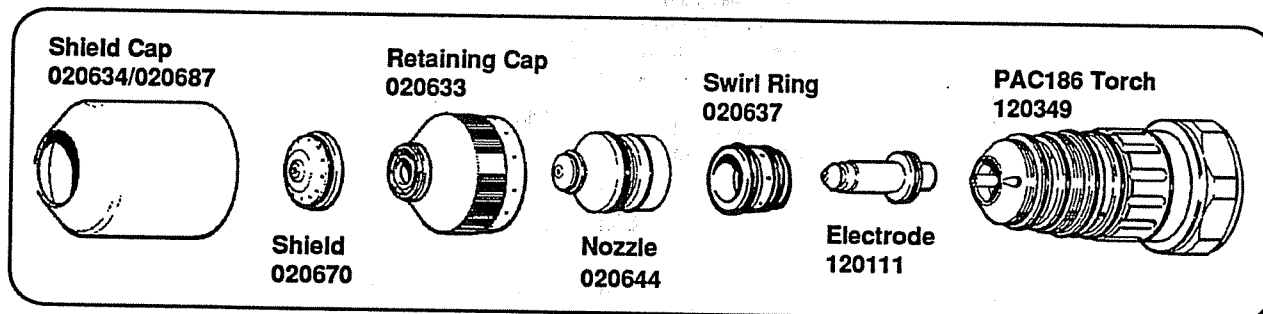


Figure 4 PAC186 Torch Port Locations

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Mild Steel - 15 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (in) (mm)	Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) *** Disconnect Type (straight)	Torch Standoff ** *** (in) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height (in) (mm)		Pierce Delay (dal) (sec)	
	Plasma O ₂ (MV1/FM1)	Shield O ₂ (MV4/FM2)	Shield N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	Preflow N ₂ (MV7/FM3)									
20 0.036 0.9	40	30	10	5	75	120	0.020	0.5	100	2.54	0.040	1.0	0	0.1
18 0.048 1.3	40	30	10	5	75	121	0.020	0.5	85	2.16	0.040	1.0	0	0.1
16 0.060 1.5	40	30	10	5	75	124	0.030	0.8	65	1.65	0.040	1.0	.5	0.2
14 0.075 1.9	40	30	10	5	75	130	0.040	1.0	45	1.14	0.060	1.5	1	0.3
12 0.105 2.7	40	30	10	5	75	132	0.040	1.0	35	0.90	0.060	1.5	1.5	0.4
10 0.135 3.4	40	30	10	5	75	134	0.040	1.0	25	0.64	0.060	1.5	2	0.50

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

* When piercing greater than 0.10 inch (2.5 mm) thickness without a pilot hole, set the following test preflow flowrates-O₂ 15% and N₂ 100%.

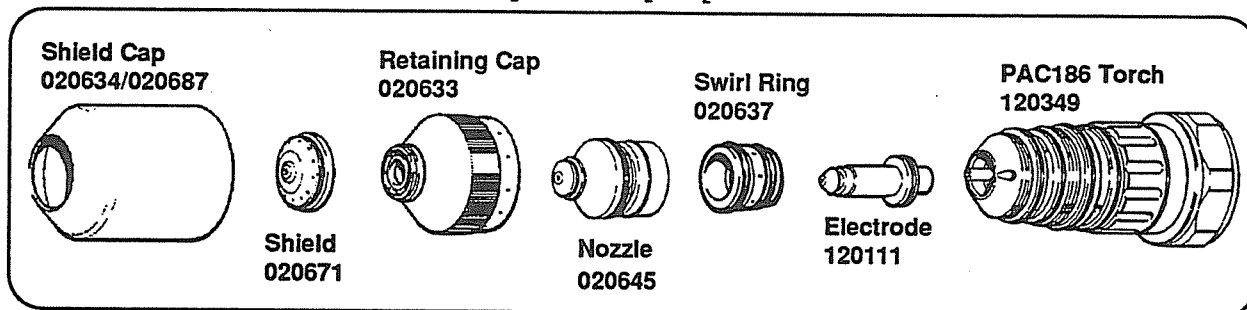
** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

*** To maintain the 0.020 inch (0.5 mm) torch standoff as the electrode wears, the arc voltage may have to be increased to avoid having the torch dive into the plate.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Mild Steel - 30 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (in) (mm)	Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff** (in) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height (in) (mm)		Pierce Delay (dial) (sec)	
	Plasma O ₂ (MV1/FM1)	Shield O ₂ (MV4/FM2)	N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	N ₂ (MV7/FM3)									
24 0.024 0.6	46	15	5	5	75	103	0.030	0.8	200	5.08	0.040	1.0	0	0
22 0.030 0.8	46	15	5	5	75	108	0.030	0.8	170	4.32	0.040	1.0	0	0
20 0.036 0.9	46	15	5	5	75	110	0.040	1.0	140	3.56	0.060	1.5	0	0
18 0.048 1.3	46	15	5	5	75	112	0.040	1.0	110	2.80	0.060	1.5	0	0
16 0.060 1.5	46	15	5	5	75	115	0.040	1.0	80	2.03	0.060	1.5	0	0.1
14 0.075 1.9	46	15	5	5	75	118	0.040	1.0	60	1.52	0.060	1.5	0	0.1
12 0.105 2.7	46	15	5	5	75	121	0.060	1.5	50	1.27	0.080	2.0	.5	0.2
10 0.135 3.4	46	15	5	5	75	124	0.060	1.5	35	0.90	0.080	2.0	1	0.3
3/16 4.8	46	15	5	5	75	125	0.060	1.5	32	0.81	0.080	2.0	1.5	0.4
1/4 6.4	46	30	10	5	75	124	0.040	1.0	25	0.64	0.080	2.0	2	0.5

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

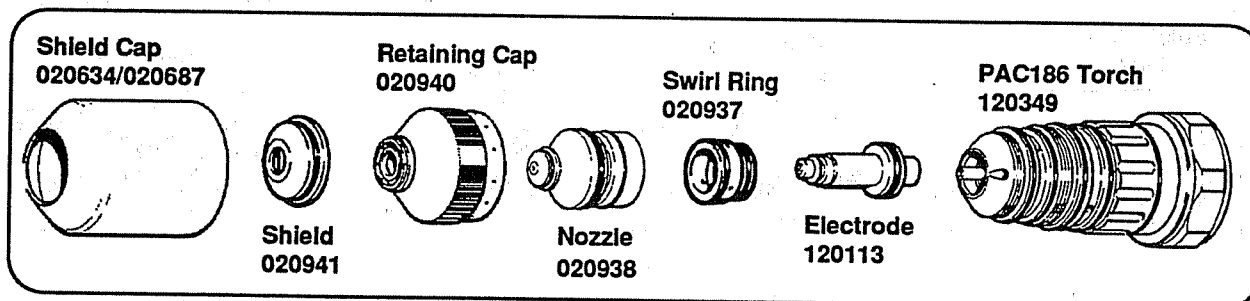
* When piercing greater than 0.12 inch (3.0 mm) thickness without a pilot hole, set the following test preflow flowrates-O₂ 15% and N₂ 100%.

** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Stainless Steel* - 30 Amp Cutting Air Plasma/Air Shield



Material Thickness (GA) (In) (mm)	Test Cut Flowrates (%)			Test Preflow Flowrates (%)		Arc Voltage** (volts) Disconnect Type (straight)	Torch Standoff*** (In) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height (In) (mm)		Pierce Delay (dial) (sec)	
	Plasma Air (MV1/FM1)	Shield Air (MV4/FM2)	AUX B (MV6/FM3)	Preflow Air (MV5/FM2)	AUX B (MV7/FM3)									
27 0.016 0.4	60	30	—	75	—	70-75	0.020	0.5	250	6.35	0.040	1.0	0	0
24 0.024 0.6	60	30	—	75	—	70-75	0.020	0.5	220	5.59	0.040	1.0	0	0
22 0.030 0.8	60	30	—	75	—	70-75	0.020	0.5	200	5.08	0.040	1.0	0	0.1
20 0.036 0.9	60	30	—	75	—	70-75	0.020	0.5	180	4.57	0.040	1.0	0	0.1
18 0.048 1.3	60	30	—	75	—	73-78	0.020	0.5	150	3.81	0.060	1.5	.5	0.2
16 0.060 1.5	60	30	—	75	—	73-78	0.020	0.5	120	3.05	0.060	1.5	.5	0.2

Air inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

* Stainless steel plate sometimes comes with a protective plastic film. Remove film prior to cutting.

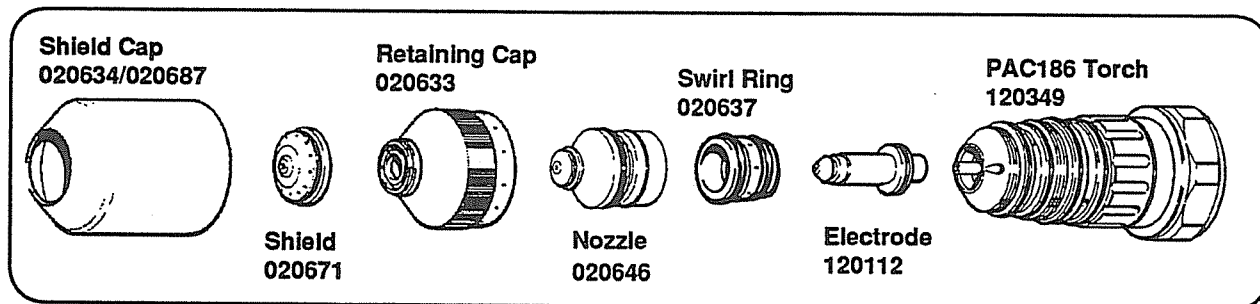
* Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

** To maintain the 0.020 inch (0.5 mm) torch standoff as the electrode wears, the arc voltage may have to be increased to avoid having the torch dive into the plate.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Mild Steel - 50 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (in) (mm)			Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff** (in) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height (in) (mm)		Pierce Delay (dia) (sec)	
			Plasma O ₂ (MV1/FM1)	O ₂ Shield (MV4/FM2)	N ₂ Shield (MV6/FM3)	O ₂ Preflow (MV5/FM2)	N ₂ Preflow (MV7/FM3)									
22	0.030	0.8	40	40	—	5	75	103	0.040	1.0	270	6.86	0.060	1.5	0	0
20	0.036	0.9	40	40	—	5	75	103	0.040	1.0	210	5.33	0.060	1.5	0	0
18	0.048	1.3	40	40	—	5	75	104	0.040	1.0	160	4.06	0.060	1.5	0	0
16	0.060	1.5	40	40	—	5	75	109	0.050	1.3	120	3.05	0.080	2.0	0	0
14	0.075	1.9	40	40	—	5	75	113	0.050	1.3	100	2.54	0.080	2.0	0	0
12	0.105	2.7	40	40	—	5	75	119	0.050	1.3	75	1.91	0.100	2.5	0	0.1
10	0.135	3.4	40	40	—	5	75	122	0.060	1.5	55	1.40	0.100	2.5	.5	0.2
	3/16	4.8	40	40	—	5	75	124	0.060	1.5	45	1.14	0.100	2.5	1	0.3
	1/4	6.4	60	60	—	5	75	127	0.080	2.0	35	0.90	0.120	3.0	2	0.5

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

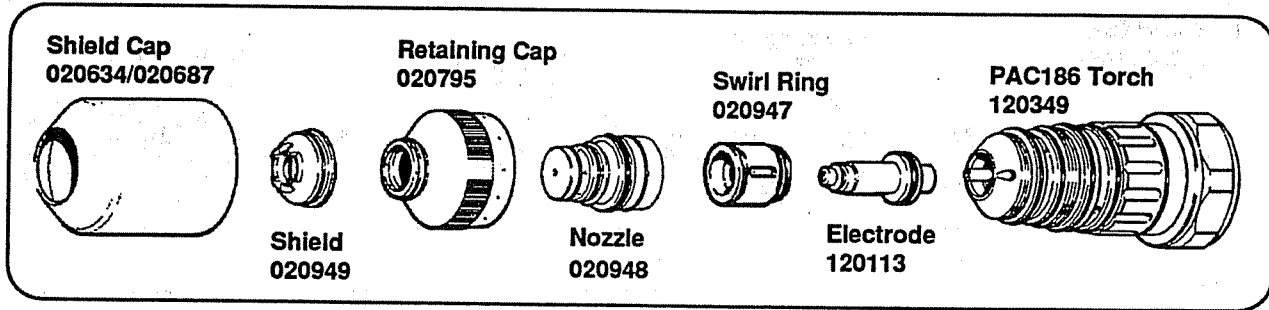
* When piercing greater than 0.14 inch (3.5 mm) without a pilot hole, set the following test preflow flowrates-O₂ 25% and N₂ 100%.

** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Stainless Steel*- 50 Amp Cutting Air Plasma/Air Shield



Material Thickness (GA) (In) (mm)	Test Cut Flowrates (%)			Test Preflow Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff* (in) (mm)	Travel Speed (lpm) (m/min)	Initial Piercing Height** (in) (mm)	Pierce Delay (dia) (sec)
	Plasma		Shield	Preflow						
	Air (MV1/FM1)	Air (MV4/FM2)	AUX B (MV6/FM3)	Air (MV5/FM2)	AUX B (MV7/FM3)					
14 0.075 1.9	40	80	—	60	—	100	0.040 1.0	120 3.05	0.120 3.0	1 0.3
12 0.105 2.7	40	80	—	60	—	100	0.040 1.0	80 2.03	0.120 3.0	1.5 0.4
10 0.135 3.4	40	60	—	60	—	110	0.060 1.5	55 1.40	0.120 3.0	1.5 0.4
3/16 4.8	40	50	—	60	—	115	0.080 2.0	40 1.02	0.160 4.0	2 0.5

Air inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

* Stainless steel plate sometimes comes with a protective plastic film. Remove film prior to cutting.

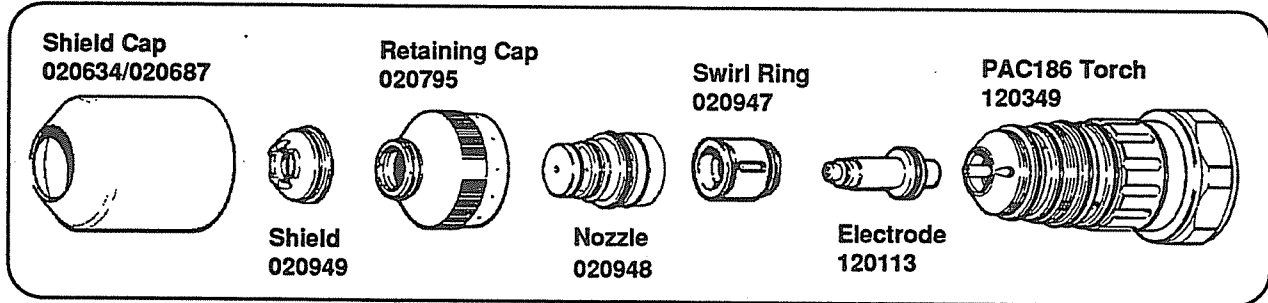
* Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

** Measured from tips of shield adapter 020949.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Copper# - 50 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (in) (mm)	Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff** (in) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height*** (in) (mm)		Pierce Delay (dial) (sec)	
	Plasma O ₂ (MV1/FM1)	Shield O ₂ (MV4/FM2)	N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	N ₂ (MV7/FM3)									
16 0.060 1.5	40	20	10	35	40	92	0.080	2.0	70	1.78	0.100	2.5	4	1.0
14 0.075 1.9	40	20	10	35	40	92	0.080	2.0	70	1.78	0.100	2.5	4	1.0
12 0.105 2.7	40	20	10	35	40	94	0.080	2.0	65	1.65	0.100	2.5	7	1.5
10 0.135 3.4	40	20	10	35	40	94	0.080	2.0	65	1.65	0.100	2.5	9	2.0

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

* Copper plate sometimes comes with a protective plastic film. Remove film prior to cutting.

* When piercing without a pilot hole, set the following test preflow flowrates-O₂ 100% and N₂ 40%.

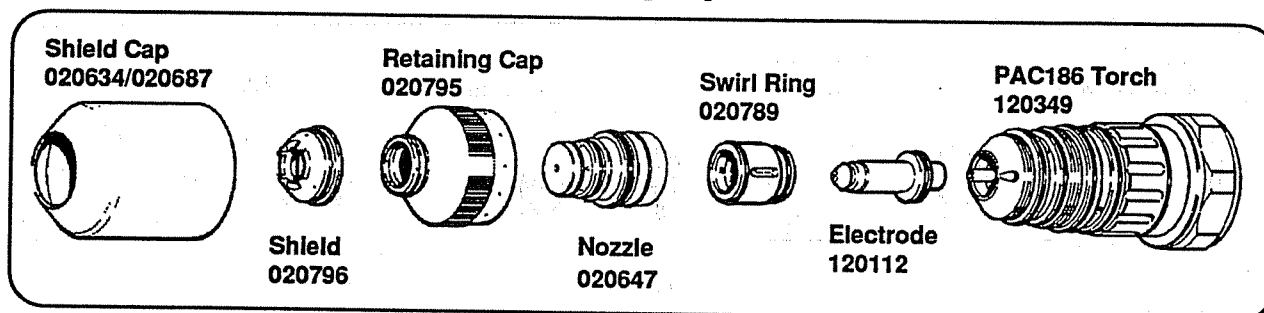
** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

*** Measured from tips of shield adapter 020949.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Mild Steel - 70 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (In) (mm)	Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff**		Travel Speed		Initial Piercing Height***		Pierce Delay	
	Plasma O ₂ (MV1/FM1)	Shield O ₂ (MV4/FM2)	Shield N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	Preflow N ₂ (MV7/FM3)		(In)	(mm)	(lpm)	(m/min)	(In)	(mm)	(dial)	(sec)
16 0.060 1.5	25	—	100	5	75	107	0.060	1.5	280	7.11	0.100	2.5	0	0.1
14 0.075 1.9	25	—	100	5	75	107	0.060	1.5	230	5.84	0.100	2.5	0	0.1
12 0.105 2.7	25	—	100	5	75	109	0.080	2.0	185	4.70	0.120	3.0	0	0.1
10 0.135 3.4	25	—	100	5	75	114	0.080	2.0	150	3.81	0.120	3.0	.5	0.2
3/16 4.8	25	—	100	5	75	119	0.080	2.0	120	3.05	0.120	3.0	1	0.3
1/4 6.4	40	—	100	5	75	129	0.080	2.0	100	2.54	0.120	3.0	2	0.5
3/8 9.5	40	—	100	5	75	135	0.100	2.5	65	1.65	0.160	4.0	4	1.0

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

Ensure retaining cap 020795 is tight for good electrical contact.

* When piercing greater than 0.14 inch (3.5 mm) without a pilot hole, set the following test preflow flowrates-O₂ 25% and N₂ 100%.

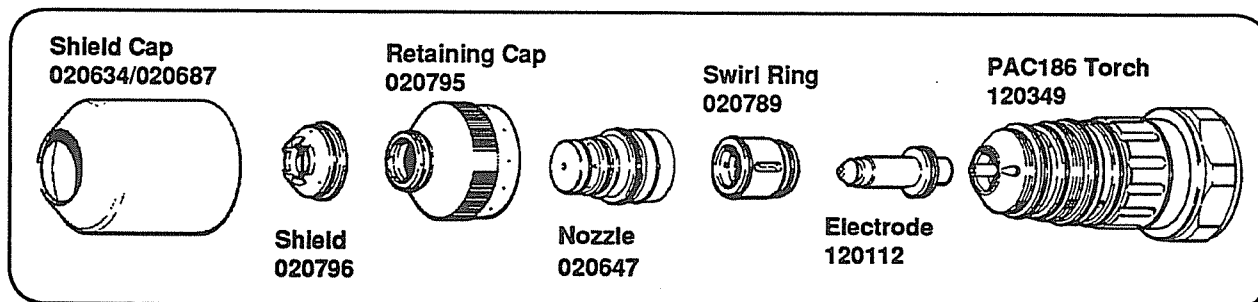
** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

*** Measured from tips of shield adapter 020796.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Stainless Steel* - 70 Amp Cutting Air Plasma/Air & CH₄ Shield



Material Thickness (GA) (in) (mm)	Test Cut Flowrates (%)			Test Preflow Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff* (in) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height** (in) (mm)		Pierce Delay (dial) (sec)	
	Plasma Air (MV1/FM1)	Shield Air (MV4/FM2)	CH ₄ (MV6/FM3)	Preflow Air (MV5/FM2)	AUX B (MV7/FM3)									
10 0.135 3.4	35	100	—	75	—	134	0.060	1.5	100	2.54	0.140	3.5	1	0.3
3/16 4.8	35	60	3	75	—	139	0.080	2.0	80	2.00	0.140	3.5	1.5	0.4
1/4 6.4	35	30	10	75	—	149	0.140	3.5	55	1.40	0.180	4.5	2	0.5
3/8 9.5	35	30	10	75	—	164	0.140	3.5	30	0.76	0.200	5.0	2	0.5
1/2 12.7	50	40	20	75	—	189	0.250	6.3	25	0.64	0.300	7.5	3	0.7

Air and CH₄ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

Ensure retaining cap 020795 is tight for good electrical contact.

* Stainless steel plate sometimes comes with a protective plastic film. Remove film prior to cutting.

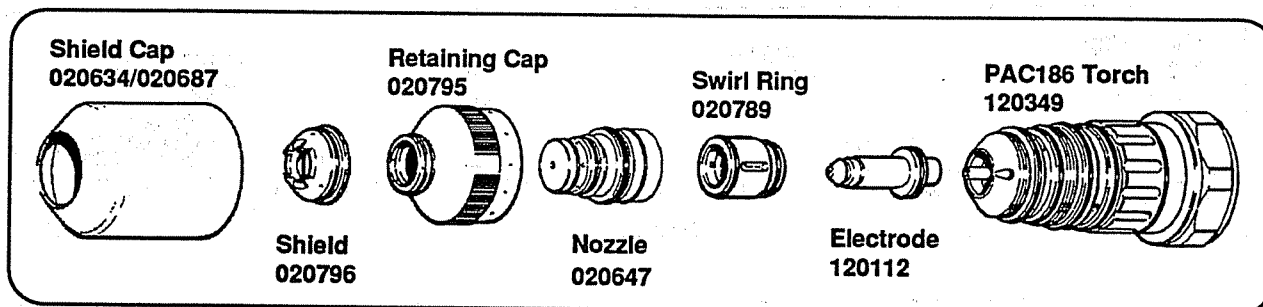
* Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

** Measured from tips of shield adapter 020796.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Aluminium* - 70 Amp Cutting Air Plasma/CH₄ Shield



Material Thickness (GA) (in) (mm)	Test Cut Flowrates (%)			Test Preflow Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff*		Travel Speed		Initial Piercing Height**		Pierce Delay	
	Plasma Air (MV1/FM1)	AUX A (MV4/FM2)	Shield CH ₄ (MV6/FM3)	Preflow Air (MV5/FM2)	AUX B (MV7/FM3)		(in)	(mm)	(ipm)	(m/min)	(in)	(mm)	(dial)	(sec)
18 0.048 1.3	45	—	40	75	—	159	0.100	2.5	150	3.81	0.160	4.0	0	0.1
16 0.060 1.5	45	—	40	75	—	159	0.100	2.5	125	3.18	0.160	4.0	0	0.1
14 0.075 1.9	45	—	40	75	—	159	0.100	2.5	100	2.54	0.160	4.0	0	0.1
12 0.105 2.7	45	—	40	75	—	159	0.100	2.5	85	2.16	0.160	4.0	.5	0.2
1/8 3.2	45	—	40	75	—	179	0.180	4.5	70	1.78	0.200	5.0	.5	0.2
10 0.135 3.4	45	—	40	75	—	179	0.180	4.5	65	1.65	0.200	5.0	.5	0.2
1/4 6.4	45	—	40	75	—	179	0.180	4.5	45	1.14	0.200	5.0	1	0.3
3/8 9.5	45	—	40	75	—	179	0.180	4.5	30	0.76	0.200	5.0	1	0.3
1/2 12.7	45	—	40	75	—	189	0.250	6.3	25	0.64	0.280	7.0	1	0.3

Air and CH₄ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

Ensure retaining cap 020795 is tight for good electrical contact.

* Aluminum plate sometimes comes with a protective plastic film. Remove film prior to cutting.

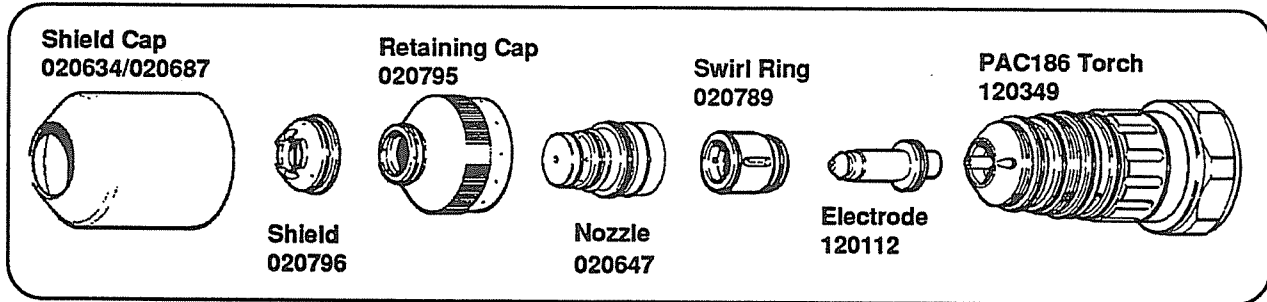
* Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

** Measured from tips of shield adapter 020796.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Copper* - 70 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (GA) (In) (mm)	Test Cut Flowrates (%)			Test Preflow* Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff** (In) (mm)		Travel Speed (ipm) (m/min)		Initial Piercing Height*** (In) (mm)		Pierce Delay (dial) (sec)	
	Plasma O ₂ (MV1/FM1)	Shield O ₂ (MV4/FM2)	N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	N ₂ (MV7/FM3)									
10 0.135 3.4	50	75	50	5	75	133	0.120	3.0	60	1.52	0.160	4.0	9	2.0
3/16 4.8	50	75	50	5	75	119	0.120	3.0	55	1.40	0.160	4.0	—	2.5
1/4 6.4	50	75	50	5	75	124	0.120	3.0	55	1.27	0.160	4.0	—	3.0
3/8 9.5	50	75	50	5	75	129	0.120	3.0	25	0.64	0.160	4.0	—	5.0

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

Ensure retaining cap 020795 is tight for good electrical contact.

* Copper plate sometimes comes with a protective plastic film. Remove film prior to cutting.

* When piercing without a pilot hole, set the following test preflow flowrates-O₂ 25% and N₂ 100%.

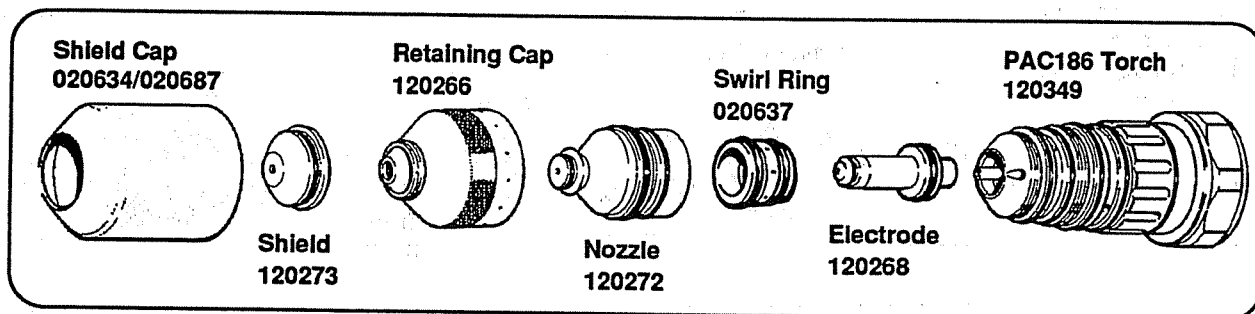
** Torch standoff tolerances are ± 0.005 inch (± 0.125 mm). When using a THC, tolerances are ± 1 volt.

*** Measured from tips of shield adapter 020796.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.

PAC182 TO PAC186 TORCH FIELD UPGRADE

HD-1070 PAC186 Operating Data (Cut) Charts Mild Steel - 100 Amp Cutting O₂ Plasma/O₂ & N₂ Shield



Material Thickness (in) (mm)	Test Cut Flowrates (%)			Test Preflow Flowrates (%)		Arc Voltage (volts) Disconnect Type (straight)	Torch Standoff *		Travel Speed		Initial Height		Pierce Delay	
	Plasma O ₂ (MV1/FM1)	O ₂ (MV4/FM2)	Shield N ₂ (MV6/FM3)	Preflow O ₂ (MV5/FM2)	N ₂ (MV7/FM3)		(in)	(mm)	(ipm)	(m/min)	(in)	(mm)	(dial)	(sec)
1/8 3.2	60	35	90	10	100	137	0.125	3.2	275	7.0	0.180	4.6	0	0.00
1/4 6.4	60	35	90	10	100	141	0.125	3.2	135	3.43	0.300	7.6	0.4	0.22
3/8 9.5	60	35	90	10	100	145	0.125	3.2	95	2.41	0.300	7.6	0.7	0.27
1/2 12.7	60	35	90	10	100	147	0.125	3.2	64	1.62	0.300	7.6	1.0	0.37

O₂ and N₂ gas inlet pressures must be between 105 - 135 psi (7.2 - 9.2 bar) for all material thickness.

* The torch standoff tolerances are ± 0.005 inch ± 0.125 mm. When using a THC, the tolerances are ± 1 volt.

If problems occur with the cutting process, and the flowrates are suspect, refer to Section 5, Maintenance, Gas System Back Pressure Checks.