



PLASMA cutting

Introduction

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PLASMA CUTTING MACHINES

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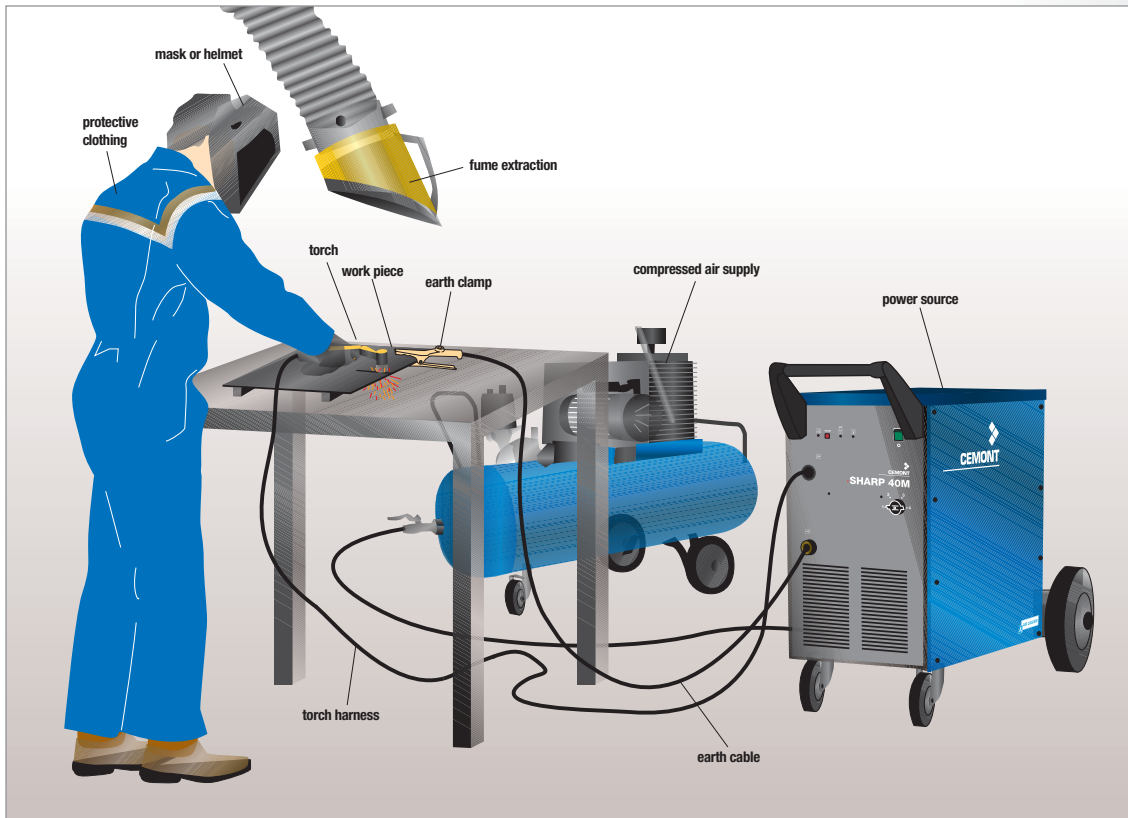
PLASMA CUTTING TORCHES

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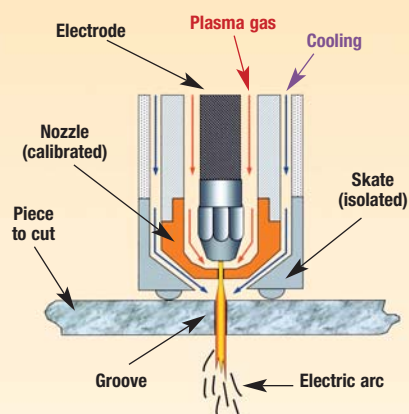


PLASMA Cutting

A TYPICAL MANUAL PLASMA CUTTING INSTALLATION



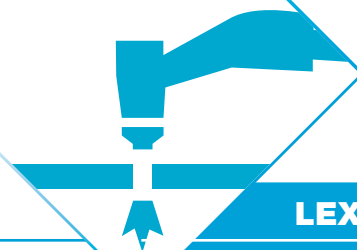
PLASMA CUTTING PROCESS



PLASMA cutting process

Plasma cutting can be used on all conductive materials. In this process, compressed air is blown at high speed out of a nozzle; at the same time an electrical arc is formed through the gas from the nozzle to the surface being cut, turning some of that gas to plasma.

The striking of the cutting arc is obtained by means of a low energy auxiliary arc.



LEXICON

PLASMA CUTTING

Cutting at distance:

With short nozzles and skirts, it is specifically designed for linear cutting using a guiding device.

Cutting in contact:

With a long and fine nozzle, it allows precise work following a drawn plan and accurate cutting at an angle without risk of arc extinction.

Duty cycle

It is defined in the standard. **It is the duration of continuous use of an equipment for a time of 10 minutes at an ambient temperature of 40 °C.**

A duty cycle of 100 A at 60% means that in 10 minutes, the equipment can cut for 6 minutes at 100 A continuously, followed by 4 minutes of cooling.

A duty cycle of 100 A at 100% means that the equipment is designed to produce 100 A continuously.

Protection index IP

The first figure indicates the maximum diameter of an object which can penetrate into the equipment and be in contact with a live component.

The second figure indicates the level of protection against **falling water**.

Example: IP **2 3**

2 Means that an object of more than 12.5 mm in diameter cannot be introduced into the equipment.

3 Means that the power source is protected against water falling in raindrops at a maximum angle of 60°.

Speed of cutting according to nozzle diameter

		Thickness (mm)	Nozzle diameter (mm)							
			FL 0.65	FL 0.8	L 1.0	L 1.2	C 1.0	C 1.2	C 1.4	C 1.8
Cutting speed (m/min)	Carbon steel	1	3.00	5.00			3.80			
		2	2.00	3.00			2.30			
		3	1.10	1.90	3.00		1.50	2.50		
		4	0.65	1.20	2.00		0.80	1.70		
		5	0.40	0.70	1.30	2.20	0.60	1.20	3.70	
		6	0.28	0.48	0.77	1.80		0.75	2.75	
		8	0.17	0.30	0.43	1.25		0.40	1.90	3.55
		10		0.15		0.75			1.25	2.55
		12							0.90	1.75
		15							0.53	1.20
		20							0.18	0.77
		25								0.42
		30								0.33
		35								0.18
	Stainless steel	1	2.00	3.50			3.50			
		2	1.00	2.00			2.00			
		3	0.60	1.00	2.20		0.90	2.20		
		4		0.65	1.40		0.65	1.40		
		5		0.40	0.80	1.50	0.36	0.90	2.50	
		6		0.25	0.52	1.00		0.60	1.80	
		8			0.33	0.60		0.24	0.97	3.25
		10							0.67	2.15
		12							0.53	1.30
		15							0.24	0.80
		20								0.40
		25								0.27
		30								0.18
		35								0.12
	Aluminium	1	4.50	6.00			8.00			
		2	2.80	4.80			5.00			
		3	1.70	2.80	4.50		3.00	4.00		
		4	1.20	1.80	3.00		1.80	2.80		
		5		1.20	1.90	3.00	1.20	2.30	4.00	
		6		0.60	1.20	2.00		1.60	3.20	
		8		0.45	0.60	1.40		0.90	2.50	4.55
		10				1.00			1.50	3.45
		12							1.20	2.55
		15								1.55
		20								1.00
		25								0.70
		30								0.40
		35								0.30

PLASMA range

SHARP TRANSFORMER				 25 MC WT	 40 MC WT
SHARP INVERTER	 10 KT	 10	 22 C WT		 40 C WT
Cutting current	30 A		65 A	80 A	120 A
Severance cut thickness	10 mm		25 mm		40 mm

SHARP 10KT + Torch CPT 800

The portable solution with integrated compressor for manual plasma cutting.

Features and product advantages:

- **Integrated compressor.**
- **Cutting:** up to 10 mm.
- **Weight:** only 16 kg.
- **Primary consumption:** < 16 A.
- **Digital display.**
- **Cutting without earth clamp** up to 2 mm.
- **Arc striking** without HF.
- Provided with 16 A plug.



Standards
EN 60974-1
EN 60974-7
EN 60974.10

Cutting capacity (for steel)	
quality	severance
8 mm	10 mm



- 1 Digital display.
- 2 On-screen Volt/Ampère selector.
- 3 On-screen pressure selector.
- 4 Regulation of cutting intensity.

TECHNICAL CHARACTERISTICS:

	SHARP 10KT
Single-phase power supply	230 V
Input power	5.1 kVA - 3.4 kW
Max input current	22.4 A
Effective input current	11.5 A
Air pressure and supply	Integrated
Duty cycle	at 40% 30 A
(10 min cycle at 40 °C)	at 60% 20 A
	at 100% 15 A
Protection class	IP 23
Insulation class	H
Dimensions	470 x 205 x 370 mm
Weight	16 kg

TO ORDER:

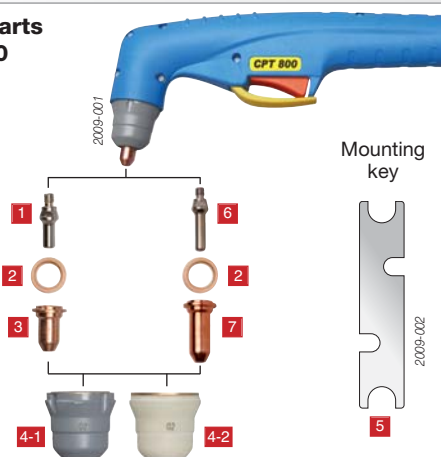
SHARP 10KT + 4 m CPT 800 torch provided (1 electrode, 1 diffuser, 1 0.8 nozzle and 1 TN skirt) + power cable + earth cable with clamp + wear part kit (1 key, 1 electrode and 1 diffuser)	W000273294
Options	
Compass	W000302512
Wear part box	W000277610

Torch CPT 800



	Reference
Air-cooled CPT 800 - 4 m	W000275097
Torch body	W000274860

Spare parts CPT 800



	Reference
Wear parts for drag cutting	
1 Electrode FL	W000274224
2 Diffuser	W000274266
3-1 Nozzle FL 0,65	W000274969
3-2 Nozzle FL 0.8	W000274265
4-1 Skirt TN	W000274226
4-2 Skirt Ti	W000274225
5 Mounting key	W000274862
Wear parts for angle cutting	
6 Long electrode	W000278629
7 Long nozzle	W000278628

SHARP 10 + Torch CPT 800



Features and product advantages:

- **Light:** easy to carry (only 8 kg).
- **Versatile:** cuts and perforates all conductive metals.
- **Contact cutting:** improves cutting quality while reducing fume emissions.
- **Complete:** everything included for immediate use.
- **Digital display:** for better regulation and optimal viewing of the parameters.
- **Arc striking:** without HF for a cleaner environment.

Cutting capacity (for steel)	
quality	severance
8 mm	10 mm



- 1 Digital display.
- 2 On-screen Volt/Ampère selector.
- 3 On-screen pressure selector.
- 4 Setting of cutting intensity.

TECHNICAL CHARACTERISTICS:

		SHARP 10
Single-phase power supply		230 V
Input power		5.1 kVA - 3.1 kW
Max input current		23 A
Effective input current		14 A
Compressed air supply		> 100 l/min - 4 bars
Current range		10 - 30 A
Duty cycle at 40 °C	at 35%	30 A
	at 60%	25 A
	at 100%	20 A
Protection class		IP 23
Dimensions		380 x 150 x 310 mm
Weight		8 kg

TO ORDER:

Power source + 4 m torch + power cable + fitted earth cable + wear part kit	W000277617
Options	
Compass	W000302512
Wear part box	W000277610

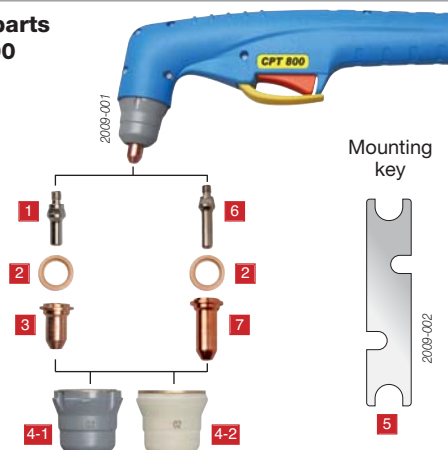


Torch CPT 800

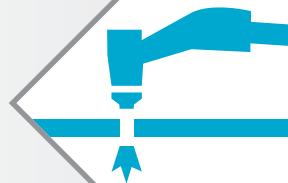


	Reference
Air-cooled CPT 800 - 4 m	W000275097
Torch body	W000274860

Spare parts CPT 800



	Reference
Wear parts for drag cutting	
1 Electrode FL	W000274224
2 Diffuser	W000274266
3-1 Nozzle FL 0,65	W000274969
3-2 Nozzle FL 0.8	W000274265
4-1 Skirt TN	W000274226
4-2 Skirt Ti	W000274225
5 Mounting key	W000274862
Wear parts for angle cutting	
6 Long electrode	W000278629
7 Long nozzle	W000278628



PLASMA POWER SOURCES



Standards

EN 60974-1
EN 60974-7
EN 60974.10

SHARP 22 C WT

Features and product advantages:

- **Compact and light:** less than 25 kg and small in size.
Easy to handle.
- **Power:** quality cutting up to 20 mm.
- **High performance:** max cutting intensity 65 A
at 40% (40 °C) or at 100% (25 °C).
- **Gouging:** for bleeding.
- **Cutting of grids:** without arc striking.
- **Contact cutting:** improves cutting quality
while reducing fume emissions.
- **Complete:** everything included for immediate use.
- **Arc striking:** without HF for a cleaner environment.
- **Autolink system:** (207-253 V / 360-440 three-phase)
Automatic setting of power supply.

Cutting capacity (for steel)

quality	severance
20 mm	24 mm

TECHNICAL CHARACTERISTICS:

	SHARP 22 C
Three-phase power supply	230/400 V (± 10%) Autolink - 50/60 Hz
Input power	10.7 kVA - 8.3 kW
Max input current	15.5 A
Effective input current	12 A
Current range	10 - 65 A
Duty cycle	at 40% 65 A at 40 °C at 60% 50 A at 40 °C at 100% 65 A at 25 °C
Protection class	IP 23
Dimensions	435 x 235 x 380 mm
Weight	25 kg

TO ORDER:

Power source + power cable + fitted earth cable + air hose	W000372414
Options	
Compass	W000302512



2012-693



2012-695

- 1 Choice of process:
cutting - cutting of grids - gouging.
Air pressure.
Primary voltage.
- 2 Setting of cutting intensity.

PLASMA CUTTING EQUIPMENT

PLASMA CUTTING
EQUIPMENT

Torch PT 100



2012-656

Delivered equipped with:

- electric primary cable,
- earth cable with clamp,
- safety instructions,
- user manual.

SHARP 40 C WT

Three phase power source for plasma cutting. Digital setting of cutting parameters. Drag or distance cutting. Gouging. Cuts up to 40 mm. New possibilities with grid cutting and gouging (with specific wear part on the torch).

Features and product advantages:

- **Power supply:** 400 V three-phase.
- **Cutting performance:** quality cut up to 40 mm.
- **Powerful:** maximum cutting current 120 A @ 60% (40 °C).
- **Plasma gouging:** an easy to use alternative to the arc air process with carbon electrode.
- **Grid cutting:** everything included for immediate use.



Standards

EN 60974-1
EN 60974-7
EN 60974.10

TECHNICAL CHARACTERISTICS:

	SHARP 40 C
Power supply	2400 V +/- 10% 50-60 HZ
Maximum input current	16.8 A
Cutting current range	10 - 120 A
Duty cycle at 60%	120 A
at 40 °C at 100%	100 A
Effective input current	11.5 A
Compressed air pressure	6 bar
Compressed air flowrate	200 l/min
Quality cut	40 mm
Separation cut	45 mm
Insulation class	H
Open circuit voltage	300 V
Protection index	IP 23S
Dimensions	720 x 310 x 430 mm
Weight	35 kg
Cutting torch	PT 100

TO ORDER:

Power source only	W000377015
Add ons	
Compass	W000371687
PT 100 torch - 6 m long	W000278170
PT 100 torch - 15 m long*	W000371687
CCT 4000C torch - 6 m long	W000274858
CCT 4000C torch - 15 m long	W000274859
Trolley	W000372274

* compressed air must be at 7 bars



Three phase



MOTOR GENERATOR
COMPATIBLE

Cutting capacity (for steel)

quality	severance
40 mm	45 mm



- 1 Process selection: standard cutting - Grid cutting - Gouging. Air pressure.
- 2 Cutting current setting.
- 3 Display.
- 4 On/Off switch.



For torch and wear parts
see page 5-11,



Torch PT 100



Torch CCT 4000C

Delivered equipped with:

- electric primary cable,
- earth cable with clamp,
- safety instructions,
- user manual.

SHARP 25 MC WT

The SHARP 25 MC is a manual plasma cutting installation dedicated to the in site or in workshops applications. This equipment with the transformer technology is highly appreciated for its ruggedness and the easiness of use.

Features and product advantages:

- **Power supply:** 220 V / 230 V / 380 V / 400 V three-phase.
- **Simple:** a single switch allows you to set the power at 3 positions.
- **Versatile:** cuts and perforates all conductive metals.
- **High performing:** high duty ratio 80 A at 40% at 40 °C.
- **Complete:** everything included for immediate use.
- **Arc striking:** without HF for a cleaner environment.

Cutting capacity (for steel)		
contact	quality	severance
8 mm	20 mm	25 mm

TECHNICAL CHARACTERISTICS:

	SHARP 25 MC WT	
Three-phase power supply	230 V	400 V
Input power	18.7 kVA - 11.2 kW	
Max input current	47 A	27 A
Effective input current	29 A	17 A
Compressed air supply	180 l/min - 5 bars	
Current range	30 - 80 A	
Duty cycle at 40 °C	at 40%	80 A
	at 80%	50 A
	at 100%	30 A
Protection class	IP 23	
Dimensions	500 x 855 x 705 mm	
Weight	80 kg	

TO ORDER:

Power source only	W000278037
Options	
Compass	W000302512
Torch PT 100 6 m	W000278170
Torch PT 100 15 m*	W000371687

* compressed air must be at 7 bars



Standards

EN 60974-1
EN 60974-7
EN 60974.10



MOTOR GENERATOR
COMPATIBLE



- 1 Defect indicator and reset button.
- 2 On/off switch.
- 3 Cutting torch.
- 4 Power selector.
- 5 Connector for earth cable.

Delivered equipped with:

- electric primary cable,
- earth cable with clamp,
- safety instructions,
- user manual.

SHARP 40 MC WT

The SHARP 40 MC is a manual plasma cutting installation dedicated to the in site or in workshops applications. This equipment with the transformer technology is highly appreciated for its ruggedness and the easiness of use.

Features and product advantages:

- **Power supply:** 220 V / 230 V / 380 V / 400 V three-phase.
- **Simple:** a single switch allows you to set the power at 4 positions.
- **Versatile:** cuts and perforates all conductive metals.
- **High performing:** high duty ratio 120 A at 50% at 40 °C.
- **Complete:** everything included for immediate use.
- **Arc striking:** without HF for a cleaner environment.

Cutting capacity (for steel)		
contact	quality	severance
8 mm	35 mm	40 mm

TECHNICAL CHARACTERISTICS:

	SHARP 40 MC WT	
Three-phase power supply	230 V	400 V
Input power	27.7 kVA - 18.4 kW	
Max input current	70 A	40 A
Effective input current	50 A	28 A
Compressed air supply	220 l/min - 5.5 bars	
Current range	30 - 120 A	
Duty cycle at 40 °C	at 40%	120 A
	at 80%	85 A
	at 100%	50 A
Protection class	IP 23	
Dimensions	500 x 855 x 705 mm	
Weight	125 kg	

TO ORDER:

Power source only	W000278038
Options	
Compass	W000302512
Torch PT 100 6 m	W000278170
Torch PT 100 15 m*	W000371687
CCT 4000C torch - 6 m long	W000274858
CCT 4000C torch - 15 m long	W000274859

* compressed air must be at 7 bars



Torch PT 100



Torch CCT 4000C



Standards

EN 60974-1
EN 60974-7
EN 60974.10

TRANSFORMER



MOTOR GENERATOR
COMPATIBLE



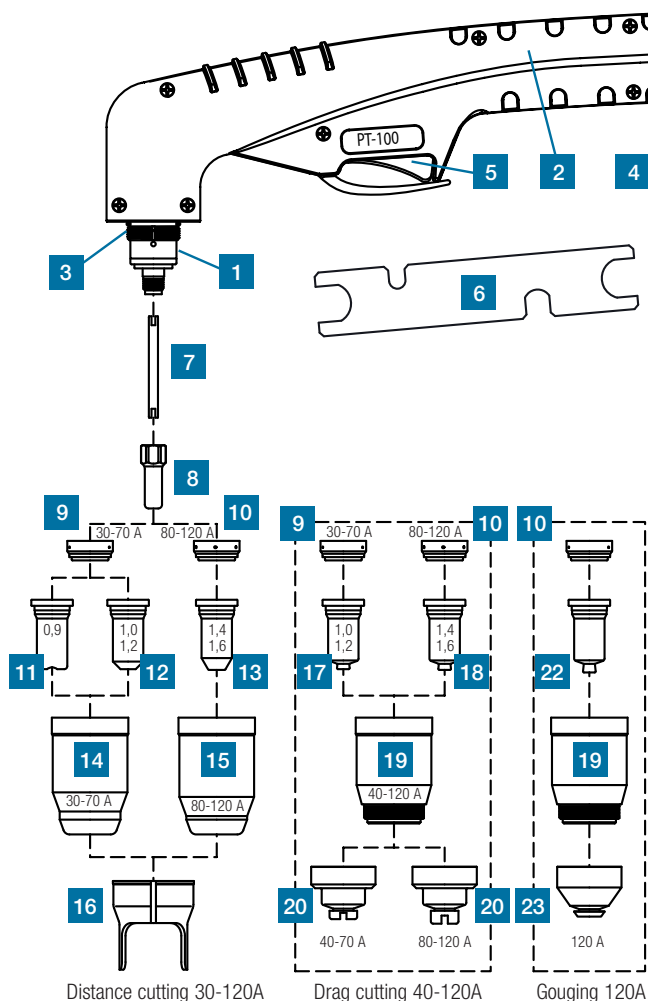
- 1 Defect indicator and reset button.
- 2 On/off switch.
- 3 Cutting torch.
- 4 Power selector.
- 5 Connector for earth cable.

Delivered equipped with:

- electric primary cable,
- earth cable with clamp,
- safety instructions,
- user manual.

TORCH PT 100

2012-556



Torch PT 100

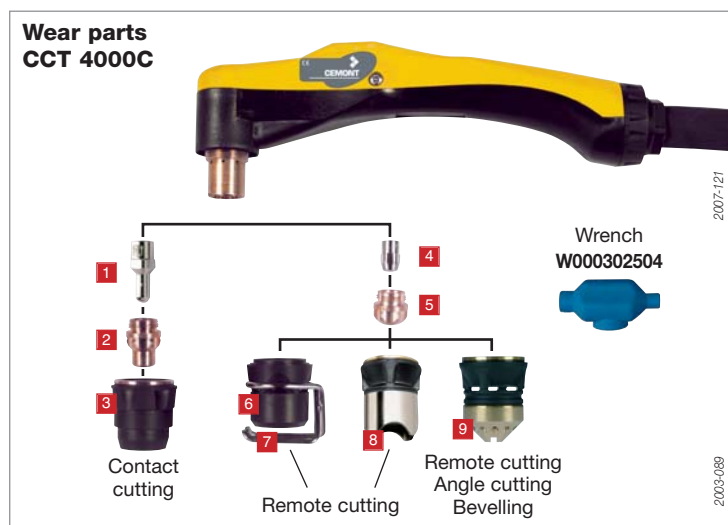
Complete torch PT 100 6 m	W000278170
Complete torch PT 100 15 m*	W000371687

Wear parts for plasma cutting torch PT 100

1 Torch body	W000278466
2 Handle	W000278631
3 O ring PT 100	W000278465
4 Torch harness with central connector	W000278467
5 Trigger	W000278630
6 Mounting key PT	W000274862
7 Cooling tube	W000278408
8 Electrode PT 100	W000278409
9 Diffuser 30-70A	W000278446
10 Diffuser 80-120A	W000278447
11 Nozzle 0,9 distance cutting	W000278448
12 Nozzle 1,0 distance cutting	W000278449
13 Nozzle 1,2 distance cutting	W000278450
14 Nozzle 1,4 distance cutting	W000278451
15 Nozzle 1,6 distance cutting	W000278452
16 Skirt 30-70A distance	W000278458
17 Skirt 80-120A distance	W000278460
18 Protection skirt for distance cutting	W000278464
19 Nozzle 1,0 contact cutting	W000278453
20 Nozzle 1,2 contact cutting	W000278454
21 Nozzle 1,4 contact cutting	W000278455
22 Nozzle 1,6 contact cutting	W000278457
23 Skirt holder for contact cutting	W000278461
24 Skirt 40-70A contact	W000278462
25 Skirt 80-120A contact	W000278463
26 Nozzle 120A for gouging	W000372420
27 Skirt for gouging	W000372421
28 Central connector	W000276319
29 Compas for PT 100	W000372708

* compressed air must be at 7 bars

CCT 4000C



Contact cutting					
	Electrode FL	Nozzle			Contact skirt
					
	2004-685	FL 0.8	L 1.0	L 1.2	2007-121
Cat. nr	W000302501	W000302505	W000302627	W000302506	W000302510

Remote cutting					
	Electrode C	W000302508		Remote skirt	W000302511
	Nozzle	C 1.0	W000302625		Remote shoe
		C 1.2	W000302626		Corrugated skirt
		C 1.4	W000302526		Conical skirt
		C 1.8	W000302523		

Compass



Maintenance box

CPT 800 torch



CPT 4000C torch



Delivered in a rugged case:

- 2 joining extensions (150 and 450 mm),
- 1 suction support,
- 1 magnetic support,
- 1 sharp point support.

* can be used on CCT torch.