

HPI NERTAJET TORCH

CPM 400 BLACK

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

**N° W000401873 - AS-CS-04097674 - W000377822 - W000377823
W000403656**



EDITION : EN
REVISION : C
DATE : 02 - 2021

Instructions for use

REF : 8695 4593

Original instructions

LINCOLN[®]
ELECTRIC

Thank for the trust you have expressed by purchasing this equipment, which will give you full satisfaction if you follow its instructions for use and maintenance.

Its design, component specifications and workmanship comply with applicable European directives.

Please refer to the enclosed CE declaration to identify the directives applicable to it.

The manufacturer will not be held responsible where items not recommended by themselves are associated with this product.

For your safety, there follows a non-restrictive list of recommendations or requirements, many of which appear in the employment code.

Finally we would ask you kindly to inform your supplier of any error which you may find in this instruction manual.

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REVISIONS

REVISION : B DATE : 10/19

DESIGNATION	PAGE
Add torch 1.6m	B2, C35

REVISION : C DATE : 02/21

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A - SAFETY INSTRUCTIONS

For general safety instructions, please refer to the specific manual supplied with the equipment.



Before any servicing operations on the torch, make sure that the generator is powered down.



During the cutting operation, the tip of the torch may be heated considerably. Before removal, it is imperative to use protective equipment.

DISCHARGING FREEZCOOL

- **RED : W00010167 (9,6 L) Pink heat transfer liquid 285**
- **GREEN: W000404005 (9,6 L)**

Freezcool should not be discharged in large quantities into the natural environment. You should observe local emission standards concerning COD(*).

Before any emission of this product, contact your local water Authority to inquire about the regulations applying to your region.

You should inform them of :

- The COD of the Freezcool (741000 mg/kg)
- The quantity in kg to be discharged

The Water Authority will advise you of the approach to be followed and in particular:

- The location
- The quantity
- The timing ...

* : The COD (Chemical Oxygen Demand) represents the portion of the product requiring oxygen, e.g. oxidizable mineral salts and the major part of organic compounds.



B - DESCRIPTION

1 - GENERAL

The **CPM 400 BLACK** torch is a plasma cutting tool that is necessarily mechanised and designed to be coupled with a **NERTAJET HPI** installation.

In a **CPM 400 BLACK** torch an electrode is inserted with a shape suitable for plasmagene gas, selected according to the application.

The end of the torch is fitted with a dual-injection nozzle, which forms the plasma, under the combined effect of the electrical arc, the plasmagene gas and the second injected gas.

2 - CHARACTERISTICS OF THE TORCH BUNDLE

Bundle reference + base	W000401873	AS-CS-04097674	W000377822	W000377823
Length of bundel	1.1 m	1.6 m	2.2 m	3.4 m
Comments	For installation NERTAJET HPI	For installation NERTAJET HPI	For installation NERTAJET HPI	For installation NERTAJET BEVEL HPI
Torch tip reference	W000403656			
Maximum intensity	600 A			
Duty cycle	100 %			
Bundle weight + base	4 Kg	4 Kg	5 Kg	7 Kg
Strike type	principle	HF		
	gas	Argon		

3 - CHARACTERISTICS OF THE FLUID

Type	Use	Supply pressure	Service pressure	Flow (max. use)			Purity
				150A	300A	450A	
-	-	Bar	Bar	l/min			
Argon	- Plasma pilot gas - Plasma marking	9	1 to 6	30	65	80	99.998%
Oxygen	- Plasma cutting gas - Plasma shield gas	9	0.5 to 7.5	21	30	50	99,5%
Nitrogen	- Plasma cutting gas - Plasma shield gas	9	0.5 to 7	75(144 **)	135	150	99.99%
N ₂ H ₂ (5%)	- Plasma cutting gas	9	3.5 to 4.5	19	19	19	99.99%
ArH ₂ 35%	- Plasma cutting gas - Plasma shield gas	9	0.5 to 7	25(29 **)	52	70	99.99%
Argon & Nitrogen (MIXOJET)	MIXOJET DUAL alimentation	12	-	32	44	56	99.99%
Hydrogen (MIXOJET)	MIXOJET DUAL alimentation	12	-	14	20	25	99.99%
Air	Plasma shield gas	9	0.5 to 5	50	130	200	Dry and oil free
Freezcool	Cooling 150A-300A-450A	-	7.5 to 8.5	4,0 l/min minimum T°=22 à 23 °C			Freezcool
				Friojet 300i	Friojet 300i	Friojet 720	
Water	Cooling 150A-300A-450A	-	7.5 to 8.5	4,0 l/min minimum T°=22 à 23 °C			(*)
				Friojet 300i	Friojet 300i	Friojet 720	

** : Bevel

(*) : NATURE OF WATER VORTEX

The water used must be demineralised with neutral pH (between 6.5 and 8.3), hardness below 10°F and resistivity above 100 KΩ/cm²/cm.

Depending on the characteristics of the water, use either a demineraliser, or a reverse osmosis system or any other deionising system.

4 - TORCH COOLING

To cool the plasma cutting torches in closed circuit with the **FRIOJET**, the following coolants may be used:

- either freezcool
- or distilled water

Special Freezcool liquid « Red » => W000010167 (9.6l can)

This coolant is:

- antifreeze down to -27°C
- anti-algae
- anti-corrosive
- non toxic
- non-flammable.



This coolant is ready for use.
NEVER ADD WATER

Special Freezcool liquid « Green » => W000404005 (9.6l can)

This coolant is:

- antifreeze down to -5°C
- anti-algae
- anti-corrosive
- non toxic
- non-flammable.



This coolant is ready for use.
NEVER ADD WATER



DO NOT MIX FREEZCOOL «RED» AND FREEZCOOL «GREEN»

Distilled water

It should have:

- high electrical resistivity
- a pH of about 7.



Caution: with water => **RISK OF FREEZING**



Caution: **NEVER ADD ANTIFREEZE**

5 - PROCESS CASES CPM 400 BLACK

W000374198	NERTAJET HP150 (30 à 130A) case	30-50-80-100-130
W000374317	NERTAJET HP300 (200 & 260 A) drawer complement	200-260
W000374318	NERTAJET HP450 (400 A) drawer complement	400
W000374319	Complement bevel (130 & 260 A)	130B-260B
W000381124	Case NERTAJET HP150 Stainless steel and aluminium (45 to 130A)	40-90-130-130B
W000381125	Drawer complement NERTAJET HP300 Stainless steel and aluminium (260 A B)	200-260B
W000381126	Drawer complement NERTAJET HP400 Stainless steel and aluminium (400 A B)	400B
W000386612	Drawer complement NERTAJET HP300 Stainless steel and aluminium bevel	130B-260B

Example of case supplied when you order the parts above:





6 - COMPATIBILITY OF DIFFUSERS



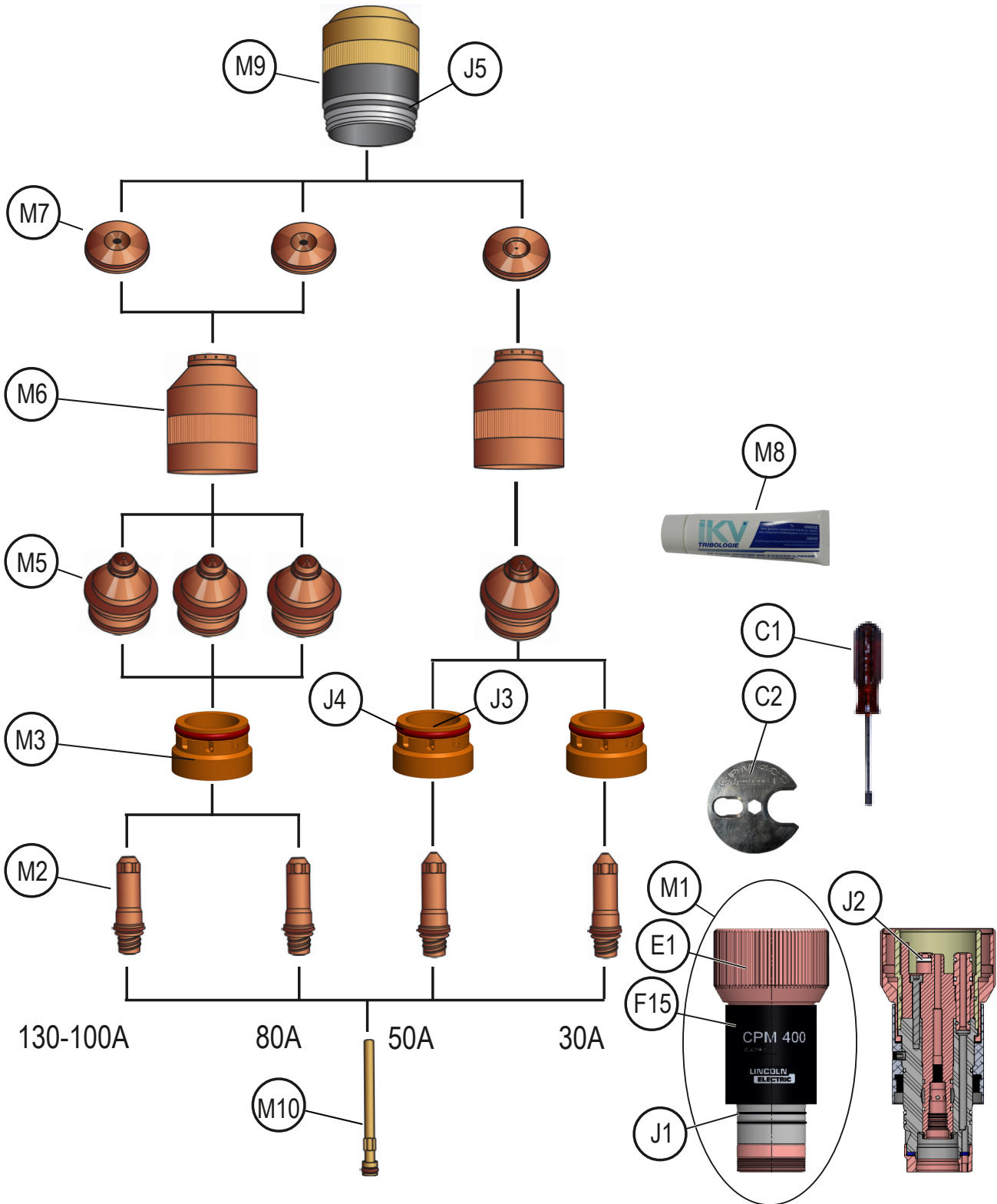
ATTENTION to the compatibility of diffusers and torch

			
CPM 400 BLACK W000403656			
CPM 400 «V2» W000373985			
CPM 400 «V1» W000275431			

Reference	Reference	Description
		
W000382599	W000402839	Plasma gas diffuser CPM400 BLACK « 30A »
W000382600	W000402840	Plasma gas diffuser CPM400 BLACK « 50A »
W000382601	W000402813	Plasma gas diffuser CPM400 BLACK « 80-100-130A »
W000382602	W000402814	Plasma gas diffuser CPM400 BLACK « 200A »
W000382603	W000402815	Plasma gas diffuser CPM400 BLACK « 260A »
W000383040	W000403509	Plasma gas diffuser CPM400 BLACK « 200A » AL-SS
W000383041	W000403509	Plasma gas diffuser CPM400 BLACK « 400A » AL-SS bevel
W000372179	W000403508	Plasma gas diffuser CPM400 BLACK «400A»

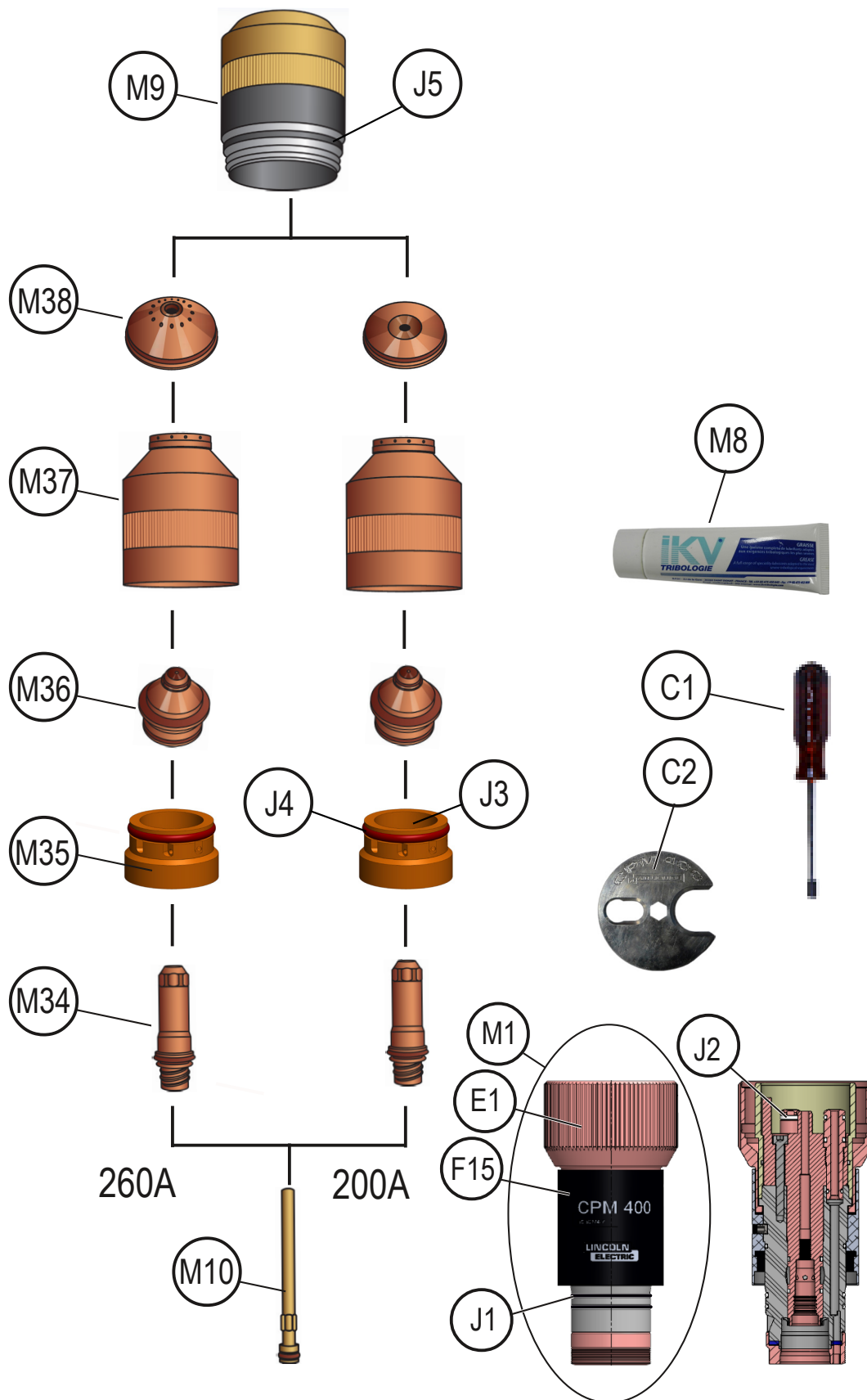
C - DESCRIPTION OF ASSEMBLING IN PLASMA CUTTING PROCESS

1 - CPM 400 BLACK Double flow steel assembly «30-130A» straight cut



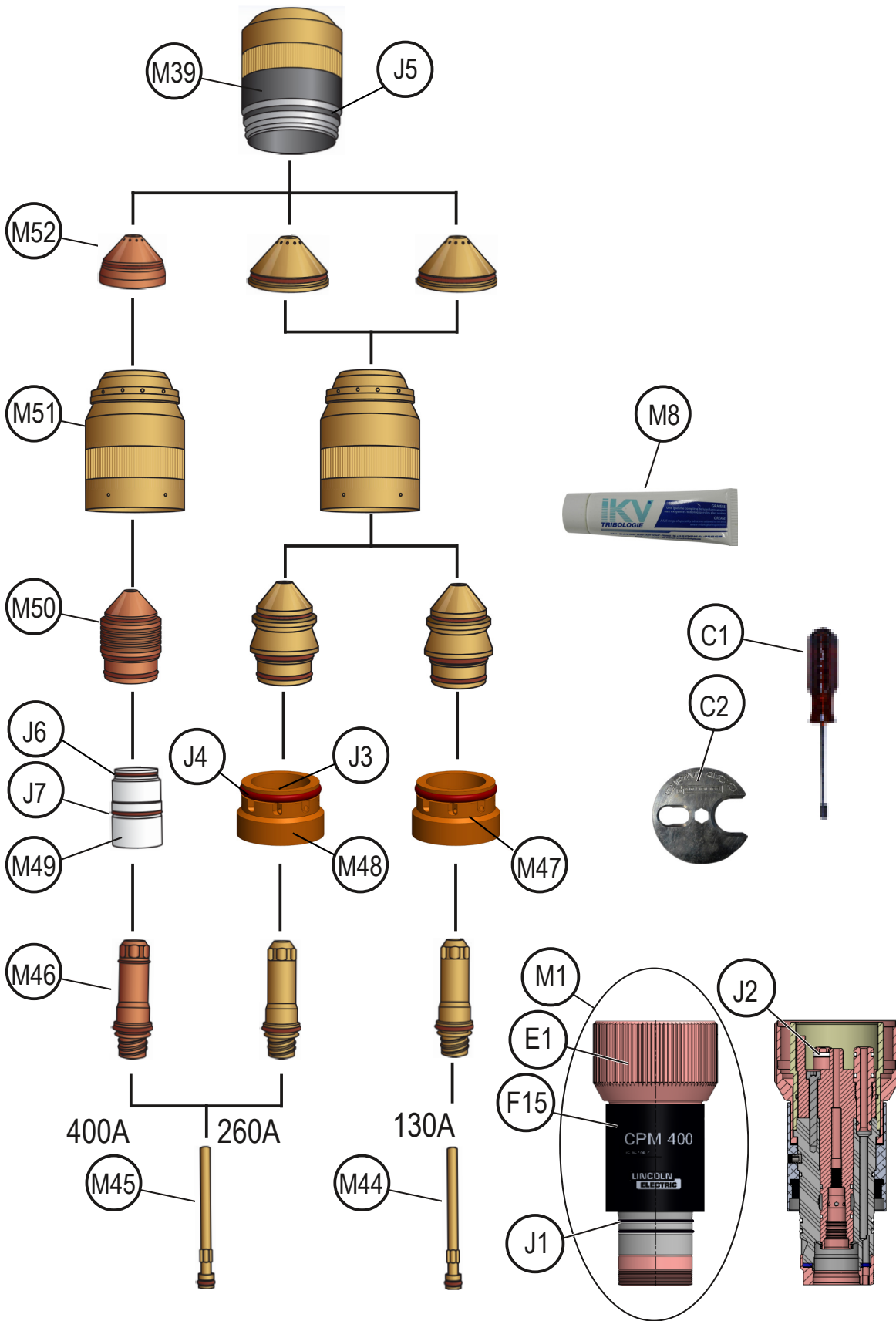
DOUBLE FLOW STEEL ASSEMBLY «30A - 130A» Straight cut			
Reference	Part no.	Description	Symbol
M1	W000403656	Torch tip CPM400 BLACK and its keys (W000275438 and W000372624)	
	J1	W000275464	Torch seal
	J2	W000372925	Seal, 6.75x1.78 Nitrile
	C1	W000275438	CPM400 BLACK key for immersion pipe
	C2	W000372624	CPM400 BLACK multi-purpose key
	M8	W000382836	Silicone grease
	F15	04180032RE	Torch body protection
	E1	04180033RE	Torch body nut
M10	W000275433	Immersion pipe CPM400 BLACK « 30-260A » straight consumable	
M2	W000275448	Electrode CPM400 BLACK « 30A »	
	W000275452	Electrode CPM400 BLACK « 50A »	
	W000275460	Electrode CPM400 BLACK « 80A »	
	W000275466	Electrode CPM400 BLACK « 100-130A »	
M3	W000402839	Plasma gas diffuser CPM400 BLACK « 30A »	
	W000402840	Plasma gas diffuser CPM400 BLACK « 50A »	
	W000402813	Plasma gas diffuser CPM400 BLACK « 80-100-130A »	
	J3	W000275464	Internal diffuser seal
	J4	W000275464	External diffuser seal
M5	W000275451	Plasma nozzle CPM400 BLACK « 30-50A »	
	W000275459	Plasma nozzle CPM400 BLACK « 80A »	
	W000275463	Plasma nozzle CPM400 BLACK « 100A »	
	W000275465	Plasma nozzle CPM400 BLACK « 130A »	
M6	W000275446	Internal cap CPM400 BLACK « 30-50A »	
	W000275458	Internal cap CPM400 BLACK « 80-100-130A »	
M7	W000275450	Downstream nozzle CPM400 BLACK « 30-50A »	
	W000275456	Downstream nozzle CPM400 BLACK « 80A »	
	W000275462	Downstream nozzle CPM400 BLACK « 100-130A »	
M9	W000275442	External cap CPM400 BLACK « 30-130A »	
	J5	W000275464	External cap diffuser seal

2 - CPM 400 BLACK Double flow steel assembly «200-260A» straight cut



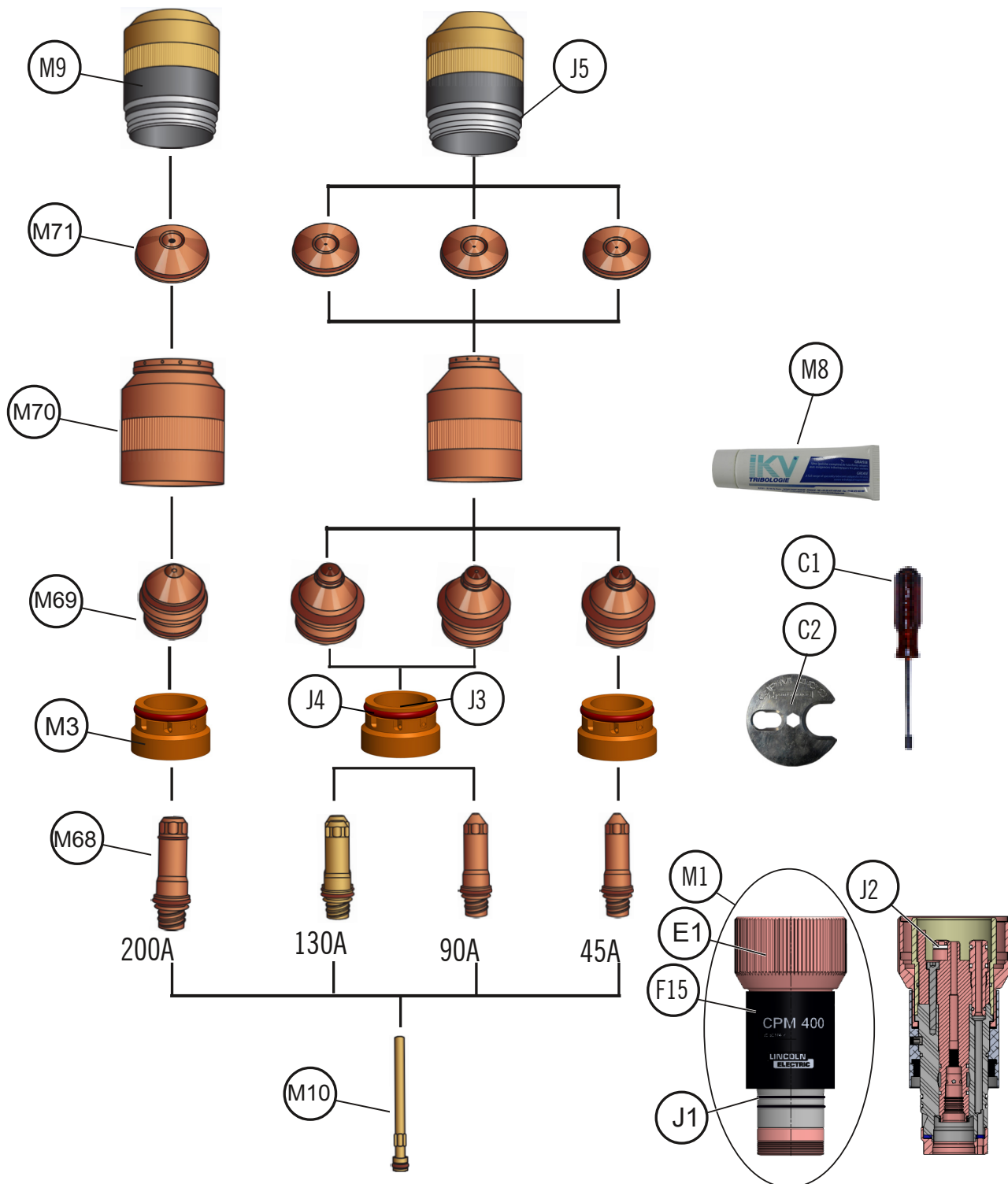
DOUBLE FLOW STEEL ASSEMBLY «200A - 260A» Straight cut			
Reference	Part no.	Description	Symbol
M1	W000403656	Torch tip CPM400 BLACK and its keys (W000275438 and W000372624)	
	J1	W000275464 Torch seal	
	J2	W000372925 Seal, 6.75x1.78 Nitrile	
	C1	W000275438 CPM400 BLACK key for immersion pipe	
	C2	W000372624 CPM400 BLACK multi-purpose key	
	M8	W000382836 Silicone grease	
	F15	04180032RE Torch body protection	
	E1	04180033RE Torch body nut	
M10	W000275433	Immersion pipe CPM400 BLACK « 30-260A » straight consumable	
M34	W000275467	Electrode CPM400 BLACK « 200A »	
	W000275475	Electrode CPM400 BLACK « 260A »	
M35	W000402814	Plasma gas diffuser CPM400 BLACK « 200A »	
	W000402815	Plasma gas diffuser CPM400 BLACK « 260A »	
	J3	W000275464 Internal diffuser seal	
	J4	W000275464 External diffuser seal	
M36	W000275468	Plasma nozzle CPM400 BLACK « 200A »	
	W000275476	Plasma nozzle CPM400 BLACK « 260A »	
M37	W000275472	Internal cap CPM400 BLACK « 200A »	
	W000275478	Internal cap CPM400 BLACK « 260A »	
M38	W000275473	Downstream nozzle CPM400 BLACK « 200A »	
	W000275479	Downstream nozzle CPM400 BLACK « 260A »	
M9	W000275439	External cap CPM400 BLACK « 200-260-400A »	
	J5	W000275464 External cap diffuser seal	

3 - CPM 400 BLACK Double flow steel assembly «130-260-400A» straight cut and bevel



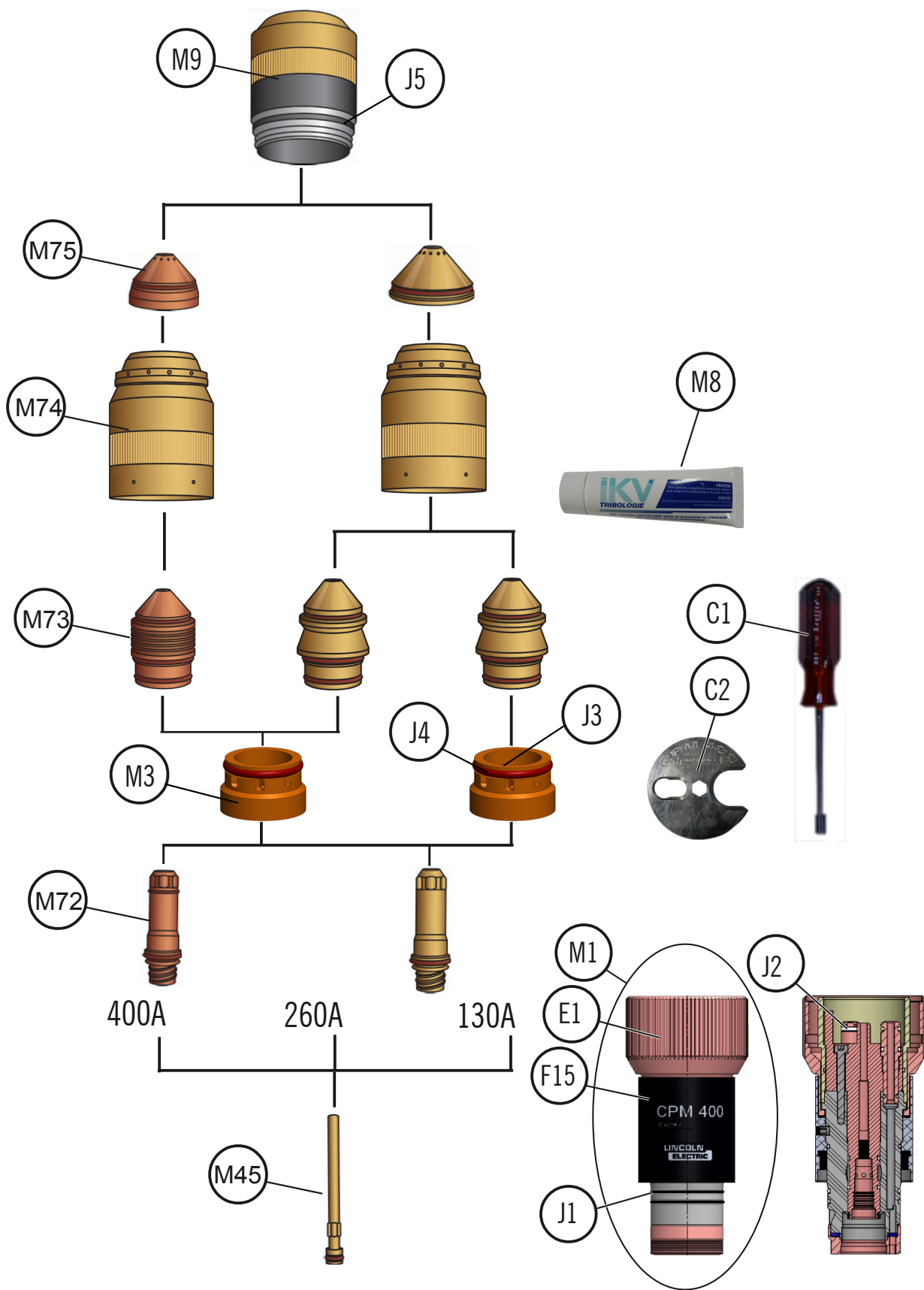
DOUBLE FLOW STEEL ASSEMBLY «130A - 260A - 400A» Straight cut and bevel			
Reference	Part no.	Description	Symbol
M1	W000403656	Torch tip CPM400 BLACK and its keys (W000275438 and W000372624)	
	J1	W000275464	Torch seal
	J2	W000372925	Seal, 6.75x1.78 Nitrile
	C1	W000275438	CPM400 BLACK key for immersion pipe
	C2	W000372624	CPM400 BLACK multi-purpose key
	M8	W000382836	Silicone grease
	F15	04180032RE	Torch body protection
	E1	04180033RE	Torch body nut
M44		W000275436	Immersion pipe CPM400 BLACK « 130A » bevel
M45		W000275435	Immersion pipe CPM400 BLACK « 260-400A » bevel
M46		W000278294	Electrode CPM400 BLACK « 130A » bevel
		W000278298	Electrode CPM400 BLACK « 260A » bevel
		W000372178	Electrode CPM400 BLACK « 400A » bevel
M47		W000402813	Plasma gas diffuser CPM400 BLACK « 130A »
M48		W000402815	Plasma gas diffuser CPM400 BLACK « 260A »
	J3	W000275464	Internal diffuser seal
	J4	W000275464	External diffuser seal
M49		W000403508	Plasma gas diffuser CPM400 BLACK « 400A »
	J6	-	Diffuser external diffuser seal 400A
	J7	-	Diffuser external diffuser seal 400A
M50		W000278295	Plasma nozzle CPM400 BLACK « 130A » bevel
		W000278299	Plasma nozzle CPM400 BLACK « 260A » bevel
		W000372180	Plasma nozzle CPM400 BLACK « 400A » bevel
M51		W000278296	Internal cap CPM400 BLACK « 130-260A » bevel
		W000372181	internal cap CPM400 BLACK « 400A » bevel
M52		W000278297	Downstream nozzle CPM400 BLACK « 130A » bevel
		W000278301	Downstream nozzle CPM400 BLACK « 260A » bevel
		W000372182	Downstream nozzle CPM400 BLACK « 400A » bevel
M39		W000275439	External cap CPM400 BLACK « 200-260-400A »
	J5	W000275464	External cap diffuser seal

4 - CPM 400 BLACK Double flow stainless steel/Alu assembly «45-90-130A-200A» straight cut

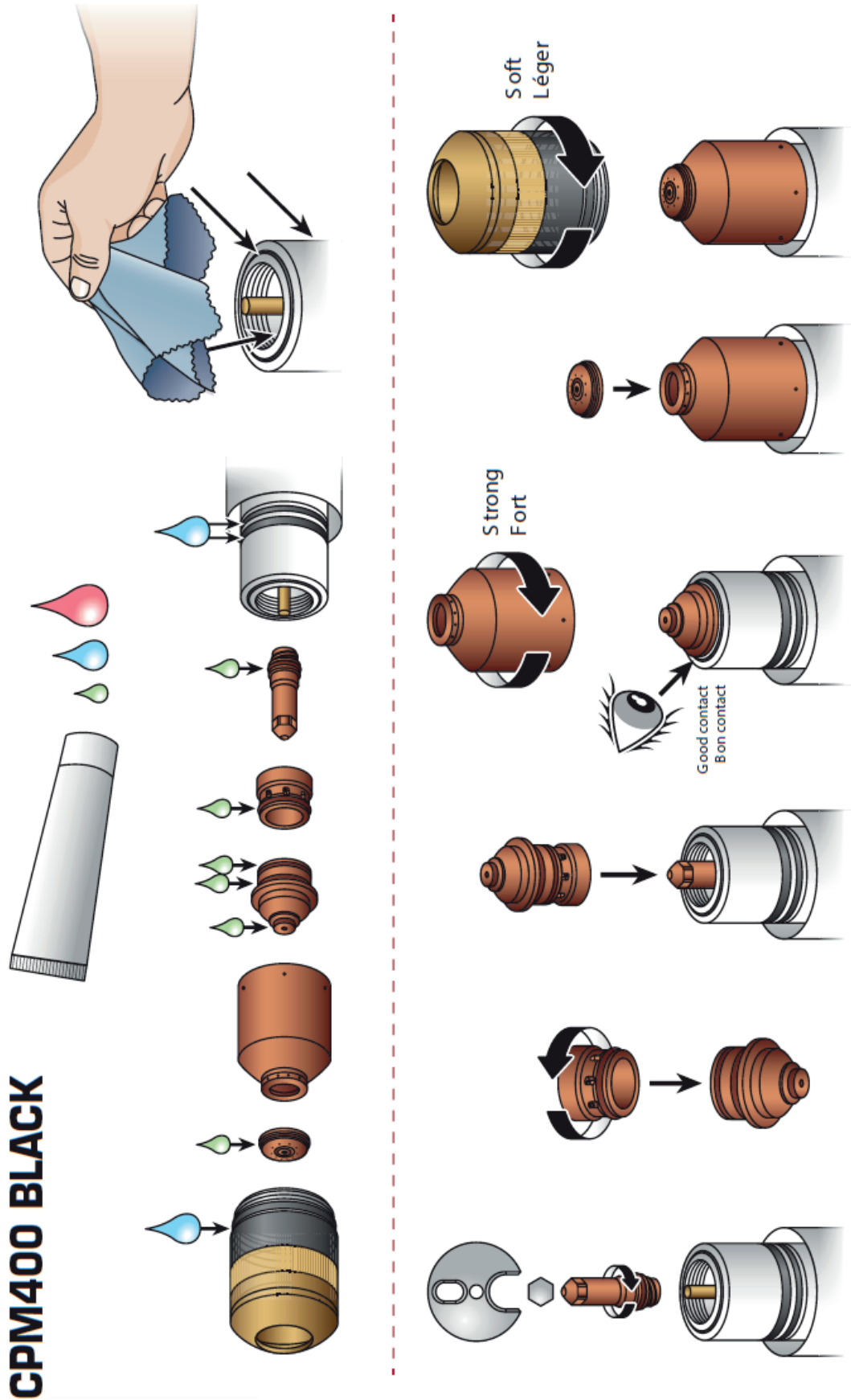


DOUBLE FLOW STAINLESS STEEL/ALUMINIUM ASSEMBLY «45A - 90A - 130A - 200A» Straight cut			
Reference	Part no.	Description	Symbol
M1	W000403656	CPM400 BLACK torch tip and its keys (W000275438 and W000372624)	
	J1	W000275464 Torch seal	
	J2	W000372925 Seal, 6.75x1.78 Nitrile	
	C1	W000275438 CPM400 BLACK key for immersion pipe	
	C2	W000372624 CPM400 BLACK multi-purpose key	
	M8	W000382836 Silicone grease	
	F15	04180032RE Torch body protection	
	E1	04180033RE Torch body nut	
M10	W000275433	CPM400 BLACK immersion pipe, straight consumable	
M68	W000375604	CPM400 BLACK 45A AL-SS electrode	
	W000375607	CPM400 BLACK 90A AL-SS electrode	
	W000375594	CPM400 BLACK 130A AL-SS electrode	
	W000375594	CPM400 BLACK 200A AL-SS electrode	
M3	W000402839	CPM400 BLACK 30-45A AL-SS plasma gas diffuser	
	W000402813	CPM400 BLACK 90-130A AL-SS plasma gas diffuser	
	W000403509	CPM400 BLACK 200A AL-SS plasma gas diffuser	
	J3	W000275464 Internal diffuser seal	
	J4	W000275464 External diffuser seal	
M69	W000375603	CPM400 BLACK 45A AL-SS plasma nozzle	
	W000375606	CPM400 BLACK 90A AL-SS plasma nozzle	
	W000375615	CPM400 BLACK 130A AL-SS plasma nozzle	
	W000375596	CPM400 BLACK 200A SS plasma nozzle	
	W000375623	CPM400 BLACK 200A AL plasma nozzle	
M70	W000375602	CPM400 BLACK 45-90-130A SS – 90A AL internal top	
	W000275458	CPM400 BLACK 45A AL -130A N2/N2 internal top	
	W000375599	CPM400 BLACK 200A SS internal top	
	W000375622	CPM400 BLACK 200A AL internal top	
M71	W000375601	CPM400 BLACK 45A AL-SS downstream nozzle	
	W000375605	CPM400 BLACK 90A AL-SS downstream nozzle	
	W000375614	CPM400 BLACK 130A AL-SS downstream nozzle	
	W000375600	CPM400 BLACK 200A AL-SS downstream nozzle	
M9	W000275442	CPM400 BLACK 45-90-130A external top	
	W000275439	CPM400 BLACK 200A external top	
	J5	W000275464 External cap diffuser seal	

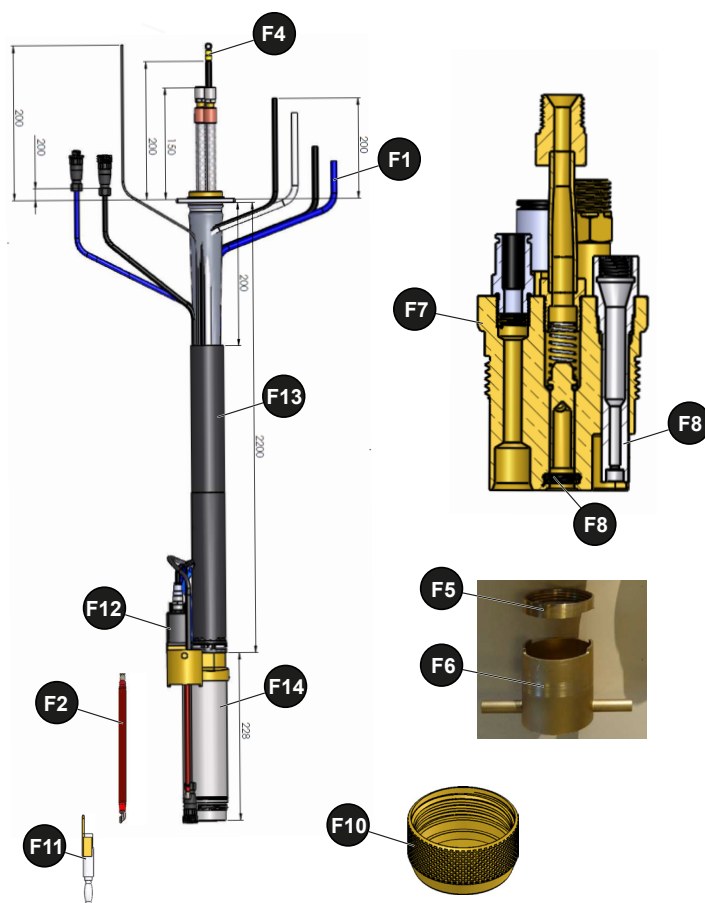
5 - CPM 400 BLACK Double flow stainless steel/Alu assembly «130-260-400A» straight cut and bevel



DOUBLE FLOW STEEL/ALUMINIUM ASSEMBLY «130A - 260A - 400A» Straight cut and bevel			
Reference	Part no.	Description	Symbol
M1	W000403656	CPM400 BLACK torch tip and its keys (W000275438 and W000372624)	
	J1	Torch seal	
	J2	Nitrile seal, 6.75x1.78	
	C1	CPM400 BLACK key for immersion pipe	
	C2	CPM400 BLACK multi-purpose key	
	M8	Silicone grease	
	F15	Torch body protection	
	E1	Torch body nut	
M45	W000275435	CPM400 BLACK 130-260A immersion pipe, bevel consumable	
M72	W000375608	CPM400 BLACK 130-260A AL-SS bevel electrode	
	W000383042	CPM400 BLACK 400A AL-SS bevel electrode	
M3	W000402813	CPM400 BLACK 130A AL-SS bevel plasma gas diffuser	
	W000402509	CPM400 BLACK 260A AL-SS bevel plasma gas diffuser	
	W000403509	CPM400 BLACK 400A AL-SS bevel plasma gas diffuser	
	J3	Internal diffuser seal	
	J4	External diffuser seal	
M73	W000375609	CPM400 BLACK 130A AL-SS bevel plasma nozzle	
	W000375613	CPM400 BLACK 260A AL-SS bevel plasma nozzle	
	W000383043	CPM400 BLACK 400A AL-SS bevel plasma nozzle	
M74	W000375612	CPM400 BLACK 130-260A AL-SS bevel internal top	
	W000383044	CPM400 BLACK 400A AL-SS bevel internal top	
M75	W000375611	CPM400 BLACK 130-260A AL-SS bevel downstream nozzle	
	W000383045	CPM400 BLACK 400A AL-SS bevel downstream nozzle	
M9	W000275439	CPM400 BLACK external top	
	J5	External top diffuser seal	

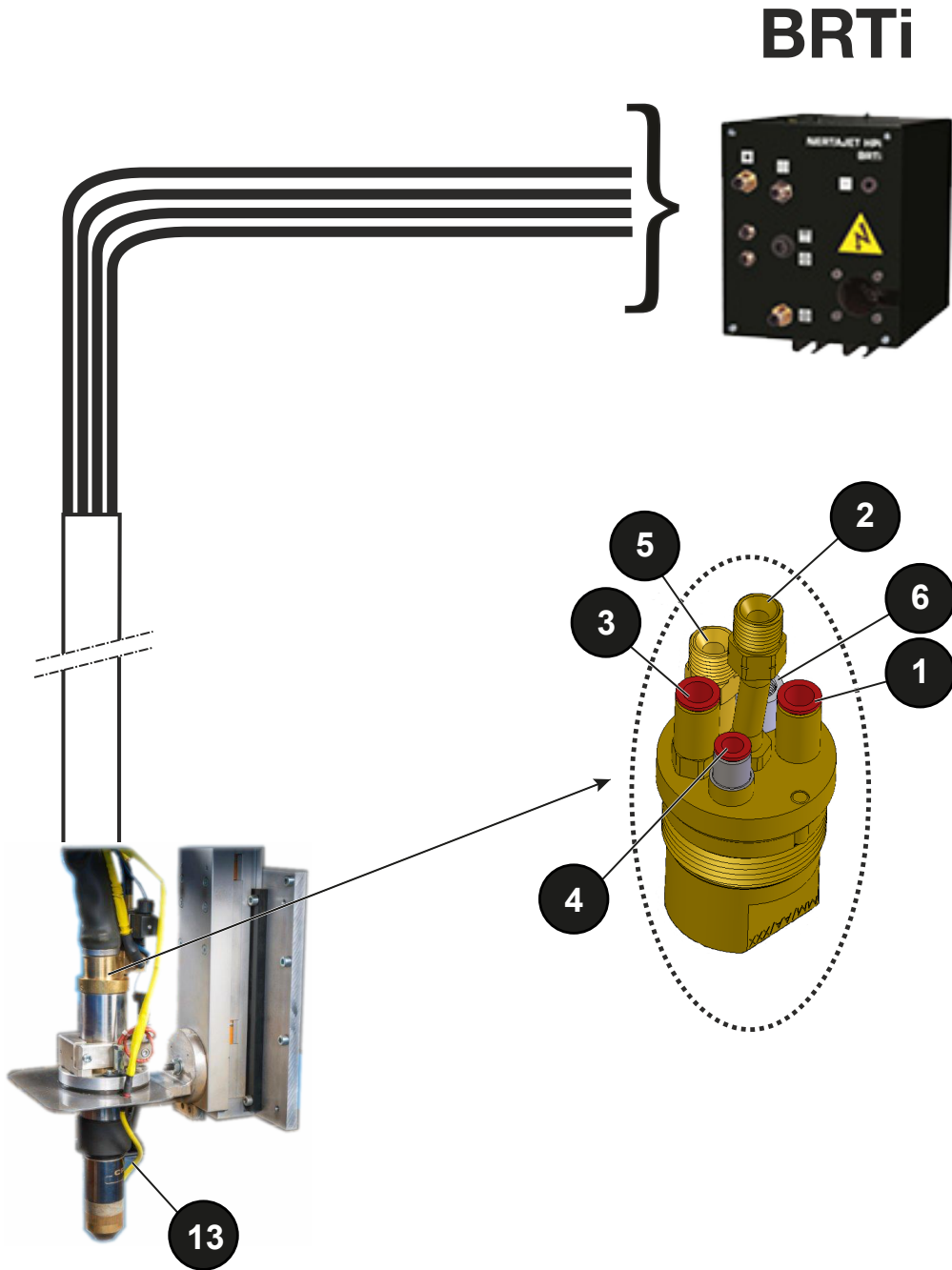


7 - BUNDLE AND CONNECTOR CPM 400 BLACK



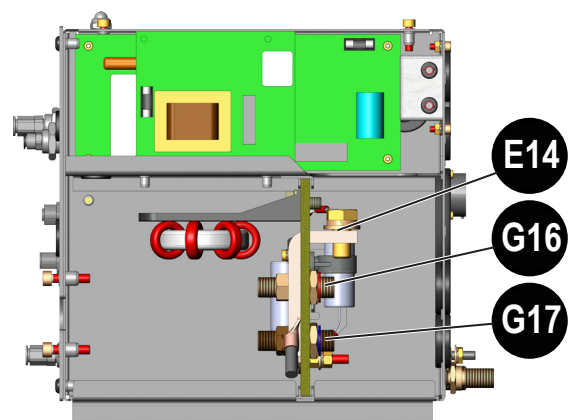
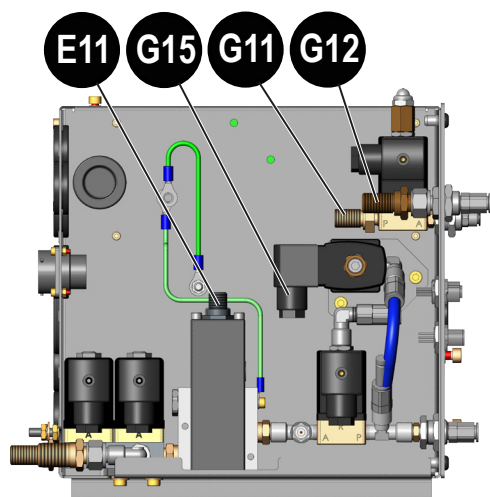
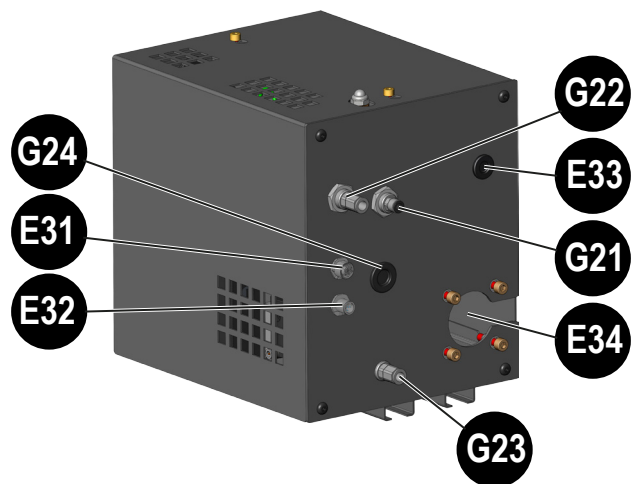
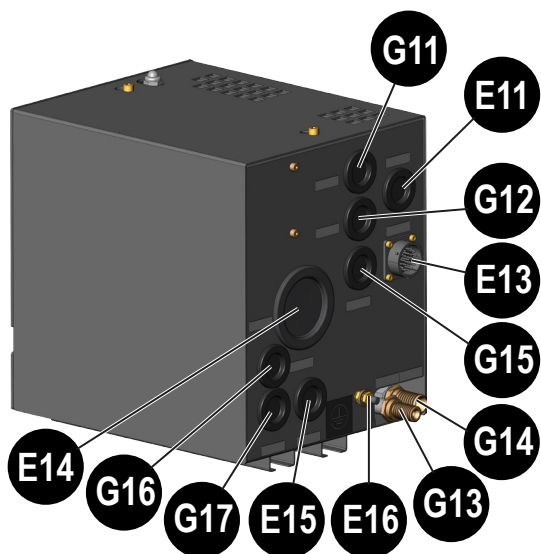
Bundle and connector HPI			
Reference	Part no.	Description	Symbol
F1	W000401873	Torch CPM400 BLACK HPI (connector + bundle) 1.1 m. Connectors compatible with BRTi	✓
	AS-CS-04097674	Torch CPM400 BLACK HPI (connector + bundle) 1.6 m. Connectors compatible with BRTi	✓
	W000377822	Torch CPM400 BLACK HPI (connector + bundle) 2.2 m. Connectors compatible with BRTi	✓
	W000377823	Torch CPM400 BLACK HPI (connector + bundle) 3.9 m. Connectors compatible with BRTi	✓
F2	W000372173	Spare cable kit « touch&go »	✓
F11	W000375219	Adapter « touch&go »	✓
F4	W000372171	Complete HF cable for torch bundle CPM400 BLACK	✓
F5	W000372172	Connector fastening nut	✓
F6	W000372170	Fastening tool for connector	✓
F7	W000381062	Complete CPM400 BLACK HPI connector	✓
F8	W000372169	HF feed-through for CPM400 BLACK connector	✓
F9	W000372968	Seal 6.8x2 for connector CPM400 BLACK	✓
F10	W000375181	Nut base protection CPM400 BLACK	✓
F12	AS-CS-5908126	HPI connector SV	✓
F13	W000383305	Complete torch bundle HPI 2.2 m	✓
F14	W000383304	Connector tube HPI	✓

1 - CONNECTING THE BUNDLES NEAR THE CPM 400 BLACK TORCH



Mark	Designation
1	Annular gas
2	Cooling circuit inlet + current supply
3	Vortex
4	Cutting gas
5	Cooling circuit return + current supply
6	Nozzle cable
13	Plate detection (for connection on the torch body)

2 - CONNECTING THE BUNDLES NEAR THE BRTi UNIT



Mark	Inputs
G11	Pilot gas/markig input
G12	Cutting gas input
G13	Annular gas 1 input
G14	Annular gas 2 input
G15	Option (Water for vortex)
G16	Cooling (return)
G17	Cooling (inlet)
E11	Annular gas proportional valve control
E13	BRGi / BRTi cable
E14	Electrode cable
E15	Nozzle cable
E16	BRTi cabinet earth connection

Mark	Outputs
G21	Pilot gas/markig line
G22	Cutting gas line
G23	CPM400 BLACK torch annular gas line
G24	CPM PRO INOX torch annular gas line
E31	Torch SV control cable - Y9
E32	Torch impact safety system cable
E33	Plate detection cable
E34	Torch connector bundle



Before any servicing operations on the torch, make sure that the generator is powered down.



During the cutting operation, the tip of the torch may be heated considerably. Before removal, it is imperative to use protective equipment.

1 - UPKEEP AND MAINTENANCE

CPM 400 BLACK plasma cutting torches are the seat of various phenomena which create the plasma arc. To do this, they are supplied with :

- electric energy,
- plasmagene gas,
- cooling wat,

Through means of a bundle of pipes and wires.

Comments:



The normal wear of the nozzle and electrode limit the service life of these parts, making their replacement necessary.

An error in assembly or leaving out a part can be detrimental to the service life of the torch.

During disassembly or reassembly of parts equipping the torch, handle them carefully in order to avoid breaking, scratching or marking them.

Always use original manufacturer parts.

Bundle:



The bundle must be installed so that it is safe from mechanical, chemical and heat damage.

Be careful of the condition of the bundle grouping sheath.

If it is defective, check the condition of the various conduits which make up the bundle.

Also check the wire leading to the part (ground wire).

The upkeep and repair work on the envelopes, conduits and isolating sheaths must never be carried out haphazardly.

Regularly check the tightening of all the connections and make sure that the electrical connections do not heat up.

Remarks:



- when the electrode is removed, be careful not to damage the end of the dipping tube located in the torch body,
- check regularly that the dipping tube is properly tightened before refitting the electrode.

2 - BASIC RULES TO FOLLOW FOR CPM 400 BLACK TORCH ASSEMBLY

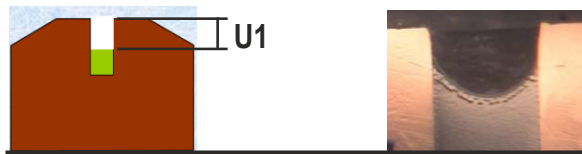


The consumables and torch are to be stored in a clean dry place.



Never use soiled or over-used consumables.

- The hafnium slug of the electrode must not be worn « U1 » (crater depth) above :
 - 1mm : 30-50 A
 - 1.5 mm: 80 to 130A
 - 2 mm: 200A



- The nozzle holes must not be deformed or obstructed.



- All the consumables and the torch must be clean and dry (clean with a dry cloth if necessary)
- Never use a dusty, moist or greasy cloth



Visually check the concentricity of the holes of the upstream and downstream nozzles.



3 - TROUBLE SHOOTING

Defects	Solutions
Pilot arcing difficult	-Check the type, pressure and flowrate of pilot gas according to the scales.
	-Check that there is sparking of the H.F between the electrode and the nozzle.
	-Check the gas conduit over the entire circuit: to do this, place a blocked nozzle on the torch and carry out a gas test : Check that the pressure displayed at the pressure-reducing valve does not move after having closed the gas cylinder ; if the pressure drops ➔ leak.
Spark-extinction at the time of transfer	- Reduce the power run-up time-delay.
	- Check the cutting gas pressures. NOTE : Be careful of the pressure increase of the pressure-reducing valves ; be careful not to move the torch too far away at the time of the transfer: risk of arc breaking.
Difficult transfer	- Check the connection of the electric wire running to the part (ground wire).
	- Check the electrode circuit, especially the connections to the bundle connections.
	- Check the condition of the cone nozzle : it is to be changed if the cutting channel is splayed downwards.
Destruction of the nozzle	The destruction of a nozzle can be caused by:
	- a power increase which is too quick : increase the power run-up time-delay,
	- contact with the part due to a metal projection during arcing in middle of sheet metal: raise the torch at time of transfer,
	- direct contact with the part,
	- a lack of cutting gas : check the flowrate or the cutting gas circuit,
	- intensity too great for the diameter of the nozzle used: see scale,
- poor cooling : check the flow on the return circuit and the temperature of the cooling circuit,	
Destruction or rapid wear of flat electrodes.	- Check the condition of the gas barrel.
	- Increase the flowrate of the cutting gas.
	- Check the cooling circuit.
	- Dipping tube in poor condition (water flowrate condition).

4 - SPARE PARTS



Spare parts relating to the consumables of the torch CPM 400 BLACK can be found in section :

« C - Description of assembling in plasma cutting process »

« D - Torch lead-bundles »

