



**PLASMATECH**  
CEA PLASMA CUTTING DIVISION

# PLASMA CUTTING

SINCE 1950







**PLASMATECH**  
CEA PLASMA CUTTING DIVISION



### **A STORY WHICH STARTED IN 1950**

Even before its inception in 1950 CEA machines had garnered a reputation for quality craftsmanship prior to World War II and today CEA is renowned in the welding and plasma cutting sectors as a steadfast partner to its worldwide distributor network.

### **HERITAGE AND PRIDE**

CEA being a well-structured company is ideally positioned to face the current global market challenges but also takes great pride in its roots and connection to the territory which has allowed for consistent growth in the years.



### **KNOW-HOW AND VERTICALIZATION OF THE MANUFACTURING PROCESS**

CEA takes great pride in the ability to control machine production, from research and design stages, to development and in-house manufacture of all parts up to final assembly of the finished product.

### **SPECIAL APPLICATION EXPERIENCE**

Besides a wide range of standard products, CEA has always worked with its customers in the solutions and development of special applications. Now in partnership with TECNOROBOT we enter a new phase which allows us to offer advanced welding and cutting solutions to complex automation and robotized procedures.





## ISO 9001

Always concerned about quality, CEA has its quality management system ISO 9001 certified since 1994. This is a guarantee of an ongoing commitment of the entire company for a continuous improvement in its products and business processes, leading to the full satisfaction of its customers.

## CE MARKING

All CEA products are CE marked, therefore compliant with all EU Directives and Standards imposing such utilization from design, manufacture and installation of the equipment up to its final disposal. In particular CE marking implies the conformity to the following main Directives:

### 2014/35/EU (LVD)

The Low Voltage Directive (LVD) defines the compliance with numerous regulations to safeguard health and safety for the operator and also regarding the electrical dimensioning of the equipment.

### 2014/30/EU (EMC)

The Directive on Electromagnetic compatibility (EMC) defines the effects of electromagnetic emissions and the immunity degree. This means that the equipment shall not emit any electromagnetic disturbances and, in turn, must be immune to any interference from other equipment or from the mains supply.

CEA power sources are designed for use in industrial environments: EMC (CISPR 11) A Class.

### 2011/65/EU (RoHS)

The Directive defines the restriction of certain hazardous substances in electrical and electronic equipment.

CEA products have been designed and built according to the following harmonised standards:

- IEC 60974-1 EN 60974-1 – Welding and Cutting power sources
- IEC 60974-7 EN 60974-7 – Torches
- IEC 60974-10 EN 60974-10 – Electromagnetic compatibility (EMC)



## ... USER FRIENDLY WEB SITE

Take advantage of the growing opportunities offered by the network, in order to build a closer dialogue with the customers. With this objective in mind, all contents, images and CEA web surfing criteria have been redefined. For more detailed information and stay up-to-date pls. visit [www.ceaweld.com](http://www.ceaweld.com) in order to find latest news, upcoming events, an innovative product selector, images, videos and many other details.

The web reserved area is particularly rich of substantial contents: an intranet with dedicated customized services for all CEA partners.



- ✓ Less energy consumption
- ✓ High efficiency
- ✓ High Power Factor
- ✓ Energy saving function

## CEA: A LOW-ENERGY IMPACT FIRM

Care for the environment has always been a fundamental value in the CEA corporate philosophy. This is proven by a keen attention towards an eco-sustainable production process, care in the selection of components, use of paints with low environmental impact and so on. The evolution of CEA's manufacturing trend, focusing towards inverter technology, has allowed to greatly improve the energy efficiency of the products. CEA GOES GREEN is the hallmark of this approach and is reflected into latest generation inverter power sources which, versus traditional equipment, ensure a considerable energy saving:

- Low energy consumption
- Compliance with "green" environment-friendly norms (i.e. RoHS)
- Reduced weight and dimensions for lower shipping costs, disposal and recycling (WEEE)

An additional investment in the pursuit of "eco-sustainability" is represented by an important 200 kWp photovoltaic plant which has made the company virtually self-sufficient from an energetic perspective.

**PLASMATECH** is the new CEA division dedicated to Plasma cutting technology. Thanks to over 30 years' experience in the cutting sector, **CEA PLASMATECH** will become your strategic partner, focused on the plasma cutting field, fully meeting all market needs in a most efficient way.

In this catalogue you will find accurate, genuine technical details who will allow you to easily choose the product best suited to your job.



## SHARK POWER SOURCES

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Technical features might change without notice

# SHARK





The **SHARK** range of plasma cutting equipment is the result of very considerable investments of capital and resources dedicated to research. **SHARK** equipment is fitted with new technology torches, which have greatly contributed to a remarkable increase of both quality and speed throughout the entire cutting process. Quality is clearly reflected in neat cuts, lack of dross, minimal heat-affected zone and sufficiently squared edges.

**SHARK** power sources represent an efficient solution for the cutting of any metal and perforated lamination sheets. Electronic control, coupled with inverter precision and flexibility, always provides the most correct parameters in order to obtain the highest quality cut depending on the thickness and type of material being cut.

**SHARK** range new **SK** torches for manual cutting and **SKM** for CNC automation allow cuts without high frequency for arc striking, thus reducing external disturbances to the environment.

**SHARK** power sources, powerful and fitted with professional high flow air circuit, ensure perfect cuts.

- Electronic control for excellent cutting quality
- Professional high flow air circulation
- Pilot arc torch
- Possibility of cutting grates and perforated lamination sheets
- Possibility of contact cutting with currents lower than 50 A, without any guiding device or other spacers.
- Regulator group with built-in filter and air impurity automatic expulsion
- Easy to read and adjust sloping front control panel, highly visible from any direction
- Metallic main structure with shockproof fibre compound front frames and control panel protected against accidental impact
- Electrical protection device on the torch to ensure operator's maximum safety



**SHARK 75-M, SHARK 105-M** and **SHARK 155-M** equipment, when fitted with SMK machine torch, are suitable to be used for automated cutting.

These power sources can be easily connected to cutting pantographs, having the ability to manage the following signals:

- Power source ON/OFF
- Cutting arc control
- Torch height



SHARK TECHNICAL DATA			SHARK 25 compressor	SHARK 45	SHARK 45 SV		SHARK 75	SHARK 105	SHARK 155
Input Voltage 50/60 Hz		V	230-1ph	230-1ph	115-1ph	230-1ph	400-3ph	400-3ph	400-3ph
Current range		A	10 ÷ 25	20 ÷ 40	20 ÷ 30	20 ÷ 40	20 ÷ 70	20 ÷ 100	25 ÷ 150
Duty Cycle at (40°C)	100%	A	-	20	-	20	55	70	100
	60%	A	20	30	20	30	65	90	120
	x%	A	25 (35%)	40 (35%)	30 (25%)	40 (35%)	70 (40%)	100 (40%)	150 (30%)
Cutting Capacity	Recommended	mm	6	10	8	10	20	30	45
	Maximum	mm	8	15	12	15	25	35	50
	Severance	mm	10	18	15	18	30	40	60
	Piercing	mm	-	8	-	8	15	20	25
Cutting power (*)		kVA	2,7	4,7	3,5	4,7	9,8	17	26,3
Weight		Kg	19	16	16		23	24	48

SHARK-M TECHNICAL DATA (MACHINE CUT)			SHARK 75-M	SHARK 105-M	SHARK 155-M
Input Voltage 50/60 Hz		V	400-3ph	400-3ph	400-3ph
Current range		A	20 ÷ 70	20 ÷ 100	25 ÷ 150
Duty Cycle at (40°C)	100%	A	55	70	100
	60%	A	65	90	120
	x%	A	70 (40%)	100 (40%)	150 (30%)
Cutting Capacity @ I <sub>2</sub> Max	Quality	mm	15	25	32
	Production	mm	20	30	40
	Maximum	mm	25	35	50
	Piercing	mm	15	20	25
Cutting power (*)		kVA	9,8	17	26,3
Weight		Kg	23	24	48

(\*) This value is obtained by multiplying the maximum current by the cutting voltage, thus allowing to evaluate the effective cutting power of the equipment.

## PLASMA GOUGING

Plasma gouging is a rapid and economical method for removing metal. Compared to traditional gouging by carbon electrodes, it gives the following advantages:

- Easy to be carried out
- Does not require any trained and skilled operators
- Enables to clearly see the gouging area
- Reduces smoke emissions and noise at the workplace

Typical applications for plasma arc gouging are:

- Pipe and fixture edge preparation
- Removal of defective welds and overwelds
- Removals of cracks
- Repairing of mild steel, aluminium and stainless tanks
- Maintenance and repairing of vehicles



# SHARK 25 compressor



Lightweight and handy, SHARK 25 compressor plasma cutting equipment, thanks to its built-in compressor, single-phase input, portability and flexibility in use, is the ideal solution for all maintenance jobs. SHARK 25 compressor is the best choice also for light fabrication work, agriculture and car body repairs.

- ✓ **SK25 Back Striking technology torch with coaxial cable**
- ✓ **Built-in compressor**
- ✓ **Portability and flexibility in the use**
- ✓ **Electronic control for an excellent cutting quality**



- ▶ Possibility of cutting grids and perforated lamination sheets
- ▶ Contact cutting possibility
- ▶ Torch with pilot arc
- ▶ Cutting parameter stability within  $\pm 15\%$  mains voltage fluctuations
- ▶ Air filter incorporated into the compressor
- ▶ Metallic main structure with shockproof fibre compound front frame
- ▶ Sloping front control panel, easy to read and adjust and highly visible from any direction
- ▶ Electric protection on the torch for the maximum safety of the operator




**SK25**


234926



418485



410681

**TECHNICAL DATA**
**ORDER INFORMATION**

			<b>SHARK 25</b>
Input Voltage 50/60 Hz		V	230-1ph
Input Power @ I <sub>2</sub> Max		kVA	5
Delayed Fuse ( I eff )		A	16
Power factor / cos φ			0,68 / 0,99
Efficiency Degree		%	80
Current range		A	10 ÷ 25
Duty Cycle at (40°C)	100%	A	-
	60%	A	20
	x%	A	25 (35%)
Cutting Capacity	Recommended	mm	6
	Maximum	mm	8
	Severance	mm	10
	Piercing	mm	-
Gas supply			Air
Gas Pressure		bar	3,5 - 4,0
Gas Flow		l/min	70 ÷ 80
Protection Class		IP	23 S
Dimensions		mm	425x220x540
Weight		Kg	19

<b>CODE</b>	<b>MANUAL CUTTING</b>
004390	<b>SHARK 25 Compressor</b> 230V-1 Ph with <b>SK25</b> torch, 4mm <sup>2</sup> / 3,2m ground cable & Consumable starting kit with: 2 Electrodes, 1 Nozzle ø 0,65 (10-20 A), 2 Nozzles ø 0,80 (20-30 A)
<b>PLASMA TORCH</b>	
022031	Torch <b>SK25</b> 4 m 25 A direct connection
343961	Consumable <b>Starting Kit</b> for SK25: 2 Electrodes, 1 Nozzle ø 0,65 (10-20 A), 2 Nozzles ø 0,80 (20-30 A)
<b>ACCESSORIES</b>	
418485	Compass for SK25 torch
410681	Wheeled torch holder
234926	Transport Trolley CTP 10



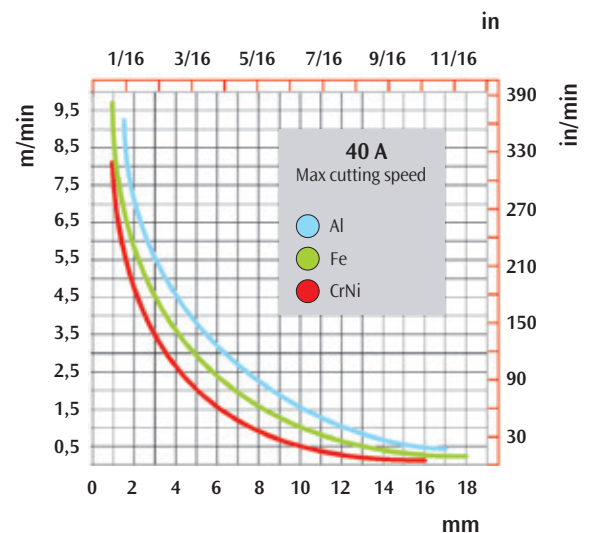
Powerful and light SHARK 45 single phase plasma cutting equipment with PFC is the ideal choice for car body repairs, agriculture and maintenance. PFC device ensures big cutting power coupled with a contained consumption.

- ✓ SK65 Back Striking technology torch with coaxial cable
- ✓ PFC Power Factor Correction - 16 A fuse
- ✓ High power professional air flow circulation
- ✓ Electronic control for an excellent cutting quality



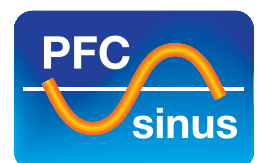
- ▶ Long life of consumable parts
- ▶ Possibility of cutting grids and perforated lamination sheets
- ▶ Contact cutting possibility
- ▶ Shockproof and dustproof control rack protection cover
- ▶ Torch with pilot arc
- ▶ Central connector for the torch
- ▶ Cutting parameter stability within  $\pm 15\%$  mains voltage fluctuations
- ▶ Regulator group with built-in filter and air impurity automatic expulsion
- ▶ Metallic main structure with shockproof fibre compound front frame
- ▶ Sloping front control panel, easy to read and adjust and highly visible from any direction
- ▶ Electric protection on the torch for the maximum safety of the operator

**CUTTING SPEED CHART**



## PFC: POWER FACTOR CORRECTION

The wave shape of the current drawn from the mains is made sinusoidal by the PFC device with a consequent total lack of harmonic disturbances in the mains and consumption optimization, which enables to utilize the power source at full range on a 16 A fuse. The PFC circuit gives the machine a wider protection against mains voltage fluctuations, by also making it safer whenever being operated by power generator sets.





SK65



234926



418485



410681



427529



427530

## TECHNICAL DATA

			SHARK 45	SHARK 45 SV	
Input Voltage 50/60 Hz		V	230-1ph	115-1ph	230-1ph
Input Power @ I <sub>2</sub> Max		kVA	5,5	4,8	5,5
Delayed Fuse ( I eff )		A	16	25	16
Power factor / cos φ			0,97 / 0,99	0,97 / 0,99	
Efficiency Degree		%	80	75	80
Current range		A	20 ÷ 40	20 ÷ 30	20 ÷ 40
Duty Cycle at (40°C)	100%	A	20	-	20
	60%	A	30	20	30
	x%	A	40 (35%)	30 (25%)	40 (35%)
Cutting Capacity	Recommended	mm	10	8	10
	Maximum	mm	15	12	15
	Severance	mm	18	15	18
	Piercing	mm	8	-	8
Gas supply			Air / N <sub>2</sub>	Air / N <sub>2</sub>	
Gas Pressure		bar	5,0 - 5,5	5,0 - 5,5	
Gas Flow		l/min	130 ÷ 150	130 ÷ 150	
Protection Class		IP	23 S	23 S	
Dimensions		mm	390x185x595	390x185x595	
Weight		Kg	16	16	

## ORDER INFORMATION

CODE	MANUAL CUTTING
004420	<b>SHARK 45</b> 230V-1 Ph with <b>SK65</b> torch, 10mm <sup>2</sup> / 4m ground cable & kit of spares with: 2 Electrodes, 1 Nozzle contact cutting ø 0,90 (30-40 A), 2 Flat Nozzles ø 1,00 (40-50 A)
004421	<b>SHARK 45-SV</b> 115-230V-1 Ph with <b>SK65</b> torch, 10mm <sup>2</sup> / 4m ground cable & kit of spares with: 2 Electrodes, 1 Nozzle contact cutting ø 0,90 (30-40 A), 2 Flat Nozzles ø 1,00 (40-50 A)
<b>PLASMA TORCH</b>	
022067	Torch <b>SK65</b> 4 m 60 A
343960	Consumable <b>Starting Kit</b> for SK65: 2 Electrodes, 1 Nozzle contact cutting ø 0,90 (30-40 A), 2 Flat Nozzles ø 1,00 (40-50 A)
<b>ACCESSORIES</b>	
418485	Compass for SK65 torch
410681	Wheeled torch holder
234926	Transport Trolley CTP 10
427529	Compressed air filter
427530	Filter cartridge Package of 4 pcs



Powerful and compact, SHARK 75 is the most efficient solution to fully meet the cutting needs of medium and light fabrication work. Its always precise cutting performance enables the achievement of the highest standards in all circumstances. Top quality cutting is achieved at high speed thanks to SK75 HPC High-Performance-Cutting technology torch, which offers a powerful and concentrated cutting beam.

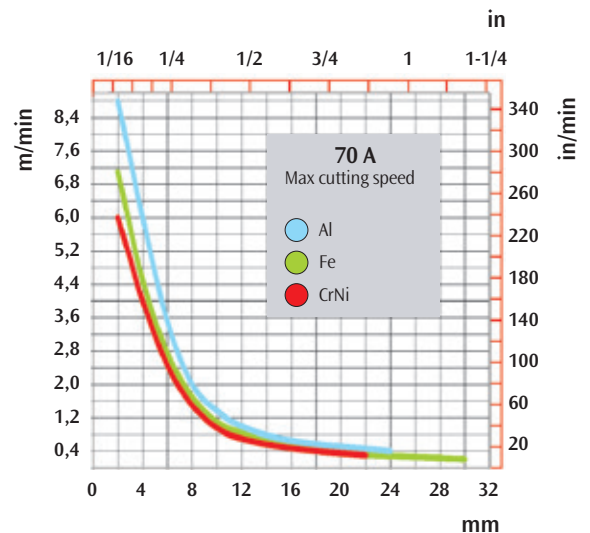
Smart Start Transfer and Smart End Cutting functions permit both initial and final cutting phases in an optimal way.

- ✓ **SK75 torch with HPC High Performance Cutting technology and coaxial cable**
- ✓ **Powerful, compact and light, only 23 Kg**
- ✓ **More productivity thanks to high quality and cutting speed**
- ✓ **Reduced operating costs granted by longer life of the consumable parts**



- ▶ Electronic control for an excellent cutting quality
- ▶ Professional high flow air circulation
- ▶ Pilot arc torch
- ▶ Possibility of cutting grids and perforated lamination sheets
- ▶ Contact cutting possibility
- ▶ “Energy Saving” function to operate the power source cooling fan only when necessary
- ▶ Cutting parameter stability within  $\pm 20\%$  mains voltage fluctuations
- ▶ Shockproof and dustproof control rack protection cover
- ▶ Electric protection on the torch for the maximum safety of the operator

**CUTTING SPEED CHART**



### SMART START TRANSFER

Innovative electronic circuit during arc striking gives an optimal and gradual pilot arc switching to the cutting arc, by ensuring an immediate stability of the plasma beam for a longer life of the torch consumables.

### SMART END CUTTING

At the end of the cutting process, the current gradually reduces to an optimal value, which favors part detachment in an efficient way. Besides minimizing noise at the end of cutting, this device also obviates the necessity of the operator having to manually separate the pieces, thereby avoiding any damage to cut surface ends.



### SK75



### SKM75



Possibility of CNC automated cutting for SHARK 75-M power source when fitted with SKM75 machine torch



### TECHNICAL DATA

		SHARK 75	
Input Voltage	50/60 Hz	V	400-3ph
Input Power @ I <sub>2</sub> Max		kVA	11
Delayed Fuse ( I eff )		A	16
Power factor / cos φ			0,87 / 0,99
Efficiency Degree		%	85
Current range		A	20 ÷ 70
Duty Cycle at (40°C)	100%	A	55
	60%	A	65
	x%	A	70 (40%)
Cutting Capacity	Recommended	mm	20
	Maximum	mm	25
	Severance	mm	30
	Piercing	mm	15
Gas supply			Air / N <sub>2</sub>
Gas Pressure		bar	5,0 - 5,5
Gas Flow		l/min	180 ÷ 210
Protection Class		IP	23 S
Dimensions		mm	390x185x595
Weight		Kg	23

### ORDER INFORMATION

CODE	MANUAL CUTTING
004425	<b>SHARK 75</b> 400V-3 Ph with <b>SK75</b> , torch 10mm <sup>2</sup> / 4m ground cable & kit of spares with: 1 Electrode, 2 Nozzles 70 A, 1 Shield cap
PLASMA TORCH	
022029	Manual Torch <b>SK75</b> 6 m 70 A
343962	Consumable <b>Starting Kit</b> for SK75: 1 Electrode, 2 Nozzles 70 A, 1 Shield cap
ACCESSORIES	
418487	Compass for SK75 torch
410684	Wheeled torch holder
418508	Bevel Tool Kit: guide carriage and circle attachment for straight and bevel cutting
234926	Transport Trolley CTP 10
427529	Compressed air filter
427530	Filter cartridge Package of 4 pcs
CODE	MECHANIZED CUTTING
004426	<b>SHARK 75-M</b> 400V-3 Ph. with <b>SKM75</b> torch <b>6 m</b> - 10 mm <sup>2</sup> / 4 m ground cable
004427	<b>SHARK 75-M</b> 400V-3 Ph. with <b>SKM75</b> torch <b>12 m</b> - 10 mm <sup>2</sup> / 4 m ground cable
PLASMA TORCHES	
022073	Machine Straight Torch <b>SKM75</b> <b>6 m</b> - 70 A with gear rack
022080	Machine Straight Torch <b>SKM75</b> <b>12 m</b> - 70 A with gear rack

Other voltages available on request



Powerful, robust and compact, SHARK 105 absolutely grants high productivity in the toughest cutting operations without any compromise: cuts are always precise and ensure the highest cutting results in all applications.

Top cutting quality at high speed by means of SK125 HPC High-Performance-Cutting technology torch, granting a powerful and concentrated cutting beam.

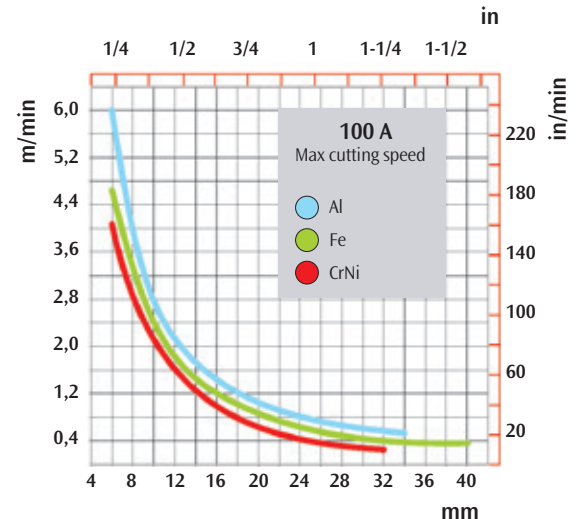
Smart Start Transfer and Smart End Cutting functions permit both initial and final cutting phases in the best way.

- ✓ **SK125 torch with HPC High Performance Cutting technology and coaxial cable**
- ✓ **Powerful, compact and light, only 24 Kg**
- ✓ **More productivity thanks to high quality and cutting speed**
- ✓ **Reduced operating costs granted by longer life of the consumable parts**



- ▶ Electronic control for an excellent cutting quality
- ▶ Professional high flow air circulation
- ▶ Pilot arc torch
- ▶ Possibility of cutting grids and perforated lamination sheets
- ▶ Contact cutting possibility
- ▶ Ability to gouging jobs
- ▶ “Energy Saving” function to operate the power source cooling fan only when necessary
- ▶ Cutting parameter stability within  $\pm 20\%$  mains voltage fluctuations
- ▶ Shockproof and dustproof control rack protection cover
- ▶ Electric protection on the torch for the maximum safety of the operator

**CUTTING SPEED CHART**



## PLASMA GOUGING

Plasma gouging represents a rapid, economic and easier method for removing metal as compared to traditional gouging by means of carbon electrodes. It reduces smoke emissions and noise; furthermore no specialized operators are required and gouging area can be clearly seen.

## SMART START TRANSFER

Innovative electronic circuit during arc striking gives an optimal and gradual pilot arc switching to the cutting arc, by ensuring an immediate stability of the plasma beam for a longer life of the torch consumables.

## SMART END CUTTING

At the end of the cutting process, the current gradually reduces to an optimal value, which favors part detachment in an efficient way. Besides minimizing noise at the end of cutting, this device also obviates the necessity of the operator having to manually separate the pieces, thereby avoiding any damage to cut surface ends.

### SK125



### SKM125



Possibility of CNC automated cutting for SHARK 105-M power source when fitted with SKM125 machine torch



### TECHNICAL DATA

### ORDER INFORMATION

		SHARK 105	
Input Voltage 50/60 Hz	V	400-3ph	
Input Power @ I <sub>2</sub> Max	kVA	15	
Delayed Fuse ( I eff )	A	16	
Power factor / cos φ		0,90 / 0,99	
Efficiency Degree	%	85	
Current range	A	20 ÷ 100	
Duty Cycle at (40°C)	100%	A	70
	60%	A	90
	x%	A	100 (40%)
Cutting Capacity	Recommended	mm	30
	Maximum	mm	35
	Severance	mm	40
	Piercing	mm	20
Gas supply		Air / N <sub>2</sub>	
Gas Pressure	bar	5,0 - 6,0	
Gas Flow	l/min	280 ÷ 330	
Protection Class	IP	23 S	
Dimensions	mm	390x185x595	
Weight	Kg	24	

CODE	MANUAL CUTTING
004430	<b>SHARK 105</b> 400V-3 Ph with <b>SK125</b> torch, 10mm <sup>2</sup> / 4m ground cable & kit of spares with: 1 Electrode, 2 Nozzles 105 A, 1 Shield cap 100-125 A
PLASMA TORCH	
022028	Manual Torch <b>SK125</b> 6 m 120 A
343963	Consumable <b>Starting Kit</b> for SK125: 1 Electrode, 2 Nozzles 105 A, 1 Shield cap 100-125 A
ACCESSORIES	
418487	Compass for SK125 torch
410684	Wheeled torch holder guide
418508	Bevel Tool Kit: guide carriage and circle attachment for straight and bevel cutting
234926	Transport Trolley CTP 10
427529	Compressed air filter
427530	Filter cartridge Package of 4 pcs
CODE	MECHANIZED CUTTING
004431	<b>SHARK 105-M</b> 400V-3 Ph. with <b>SKM125</b> torch <b>6 m</b> - 10 mm <sup>2</sup> / 4 m ground cable
004432	<b>SHARK 105-M</b> 400V-3 Ph. with <b>SKM125</b> torch <b>12 m</b> - 10 mm <sup>2</sup> / 4 m ground cable
PLASMA TORCHES	
022074	Machine Straight Torch <b>SKM125</b> <b>6 m</b> - 120 A with gear rack
022081	Machine Straight Torch <b>SKM125</b> <b>12 m</b> - 120 A with gear rack

Other voltages available on request



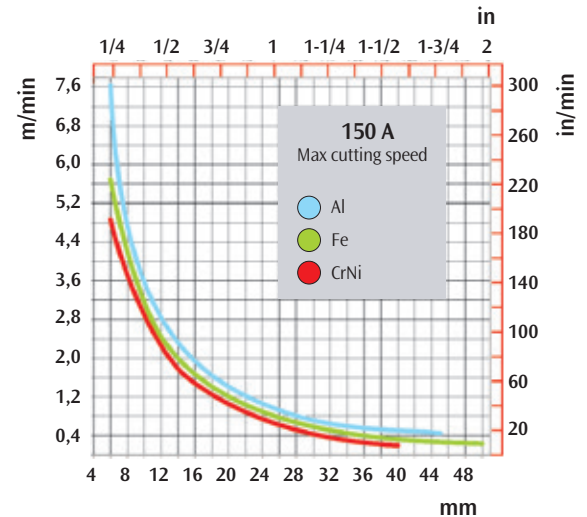
With its stunning cutting force, SHARK 155 is the most powerful machine in the range. Robust and precise, it ensures extremely high quality cutting results also on very large thickness. Equipped with a display for the digital control of all the parameters, it grants the highest cutting quality at high speed by means of SK165 HPC High-Performance-Cutting technology torch, which combines the concentrated cutting beam to high power. Smart Start Transfer and Smart End Cutting functions permit both initial and final cutting phases in the best way.

- ✓ **SK165 torch with HPC High Performance Cutting technology and coaxial cable**
- ✓ **Digital display for the digital control of all parameters**
- ✓ **Very high cutting power**
- ✓ **More productivity thanks to high quality and cutting speed**



- ▶ Reduced operating costs granted by longer life of the consumable parts
- ▶ Electronic control for an excellent cutting quality
- ▶ Professional high flow air circulation
- ▶ Pilot arc torch
- ▶ Possibility of cutting grids and perforated lamination sheets
- ▶ Contact cutting possibility
- ▶ Ability to gouging jobs
- ▶ Cutting parameter stability within  $\pm 20\%$  mains voltage fluctuations
- ▶ Shockproof and dustproof control rack protection cover
- ▶ Electric protection on the torch for the maximum safety of the operator

**CUTTING SPEED CHART**



## PLASMA GOUGING

Plasma gouging represents a rapid, economic and easier method for removing metal as compared to traditional gouging by means of carbon electrodes. It reduces smoke emissions and noise; furthermore no specialized operators are required and gouging area can be clearly seen.

## SMART START TRANSFER

Innovative electronic circuit during arc striking gives an optimal and gradual pilot arc switching to the cutting arc, by ensuring an immediate stability of the plasma beam for a longer life of the torch consumables.

## SMART END CUTTING

At the end of the cutting process, the current gradually reduces to an optimal value, which favors part detachment in an efficient way. Besides minimizing noise at the end of cutting, this device also obviates the necessity of the operator having to manually separate the pieces, thereby avoiding any damage to cut surface ends.

### SK165



### SKM165



Possibility of CNC automated cutting for SHARK 155-M power source when fitted with SKM165 machine torch



234927



418488



418507



410686



427529



427530

### TECHNICAL DATA

		SHARK 155	
Input Voltage 50/60 Hz	V	400-3ph	
Input Power @ I <sub>2</sub> Max	kVA	27,5	
Delayed Fuse ( I eff )	A	30	
Power factor / cos φ		0,89 / 0,99	
Efficiency Degree	%	86	
Current range	A	25 ÷ 150	
Duty Cycle at (40°C)	100%	A	100
	60%	A	120
	x%	A	150 (30%)
Cutting Capacity	Recommended	mm	45
	Maximum	mm	50
	Severance	mm	60
	Piercing	mm	25
Gas supply		Air / N <sub>2</sub>	
Gas Pressure	bar	5,0 - 6,0	
Gas Flow	l/min	360 ÷ 410	
Protection Class	IP	23 S	
Dimensions	mm	515x290x730	
Weight	Kg	48	

### ORDER INFORMATION

CODE	MANUAL CUTTING
004435	<b>SHARK 155</b> 400V-3 Ph with <b>SK165</b> , torch 35mm <sup>2</sup> / 4m ground cable & kit of spares with: 1 Electrode, 1 Nozzle 105 A, 1 Nozzle 125 A, 1 Nozzle 160 A, Shield cap 105-160 A
PLASMA TORCHES	
022032	Torch <b>SK165</b> 6 m 160 A
343059	Consumable <b>Starting Kit for SK165</b> : 1 Electrode, 1 Nozzle 105A, 1 Nozzle 125 A, 1 Nozzle 160 A, 1 Shield cap 105-160 A
ACCESSORIES	
418488	Compass for SK165 torch
410686	Wheeled torch holder guide
418507	Bevel Tool Kit: guide carriage and circle attachment for straight and bevel cutting
234927	Transport Trolley CTP 15
427529	Compressed air filter
427530	Filter cartridge Package of 4 pcs
CODE	MECHANIZED CUTTING
004436	<b>SHARK 155-M</b> 400V-3 Ph. with <b>SKM165</b> torch <b>6 m</b> - 35 mm <sup>2</sup> / 4 m ground cable
004437	<b>SHARK 155-M</b> 400V-3 Ph. with <b>SKM165</b> torch <b>12 m</b> - 35 mm <sup>2</sup> / 4 m ground cable
PLASMA TORCHES	
022076	Machine Straight Torch <b>SKM165</b> <b>6 m</b> - 160 A
022082	Machine Straight Torch <b>SKM165</b> <b>12 m</b> - 160 A

Other voltages available on request

# SK - SKM





Torch	Current	Back Striking	HPC	Coaxial cable	Quick connector	Length
SK25	25 A @ 60%	✓		✓		4 m
SK65	60 A @ 80%	✓		✓	✓	4 m
SK75	70 A @ 50%		✓	✓	✓	6 m
SK125	125 A @ 60%		✓	✓	✓	6 m
SK165	160 A @ 60%		✓	✓	✓	6 m
SKM75	70 A @ 50%		✓	✓	✓	6 / 12 m
SKM125	125 A @ 60%		✓	✓	✓	6 / 12 m
SKM165	160 A @ 60%		✓	✓	✓	6 / 12 m

## SK and SKM torches

SK and SKM torches used for SHARK equipment are the result of research carried out in the last decade, in order to improve the performance of the plasma cutting beam, thus increasing its control and its thermal energy.

**SK25 - SK65**, torches, used on single phase equipment, are based on back striking technology which produces consistently precise arc striking with a consequent longer life of the consumables.

**SK75 - SK125 - SK165** torches for manual cutting and **SKM75 - SKM125 - SKM165** machine torches for mechanized cutting are characterized by High Performance Cutting HPC technology which permits an increase in air quantity and speed, to better concentrate the plasma cutting beam and to stabilize the cutting arc, thus achieving:

- high cutting speed
- optimal quality and cleanliness of the cut surfaces
- high concentration of the plasma cutting beam
- lack of dross
- reduction in the heat affected zone
- longer life of the consumables
- piercing on lamination achieved in shorter times

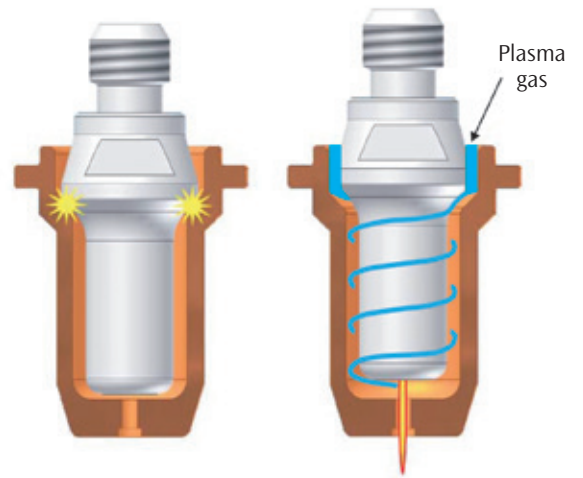
All SK and SKM torches are fitted with a **coaxial cable** which combines great flexibility to robustness and resistance to crushing.

## BACK STRIKING

It represents the best solution for plasma torches up to 60 A. In conventional torches without high frequency, the arc striking is obtained by means of compressed air which moves away the electrode head from the inner part of the nozzle. This system causes, in the plasma flow exit area, both electrode and nozzle material deterioration because of burns and deformations subsequent to pilot arc striking between them. In contrast, the back striking system takes place in the rear side of the electrode and nozzle, thus leaving clean and unaltered the flow exit area.

Main advantages are:

- Longer life of the consumables
- Striking always precise and safe
- Better cutting quality over time

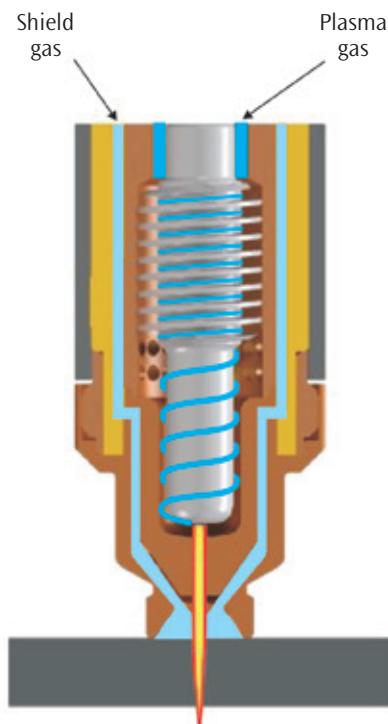


## HIGH PERFORMANCE CUTTING - HPC

**HPC – High Performance Cutting** technology permits the generation of radial and swirling gas flows to the cutting arc axis, thus creating a plasma beam at a very high temperature that melts and vaporizes the surface being cut in a more efficient way.

This technology also avoids the phenomenon of the double arc – formation of two arcs in series between the cathode and the workpiece surface – the main reason for damage to the nozzle and arc instability – by ensuring the highest quality and the best cutting performance together with a longer life of the consumables.

**High Performance Cutting** technology is the very best choice for plasma torches with nominal cutting currents above 60 A.



New **High Performance Cutting SK torches** increase the density of the plasma cutting beam and reduce the width of the arc cut area, by producing a narrower and less inclined cut. This is achieved by easily removing the molten material with a consequent improvement of the cutting quality, which shows neat cuts, lack of dross, minimal heat-affected zone and sufficiently squared edges.

Main advantages are:

- Better cutting quality
- High cutting speeds
- Narrower cuts
- Longer life of the consumables

Swirling gas flow and collimation of the beam





# CS - ORIGINAL SPARE PARTS

CS is our guarantee hallmark for CEA PLASMATECH consumables. All original consumables belonging to SK and SKM torches of SHARK equipment are CS marked to prove the origin. The CS mark, present on all consumables, is the guarantee that all declared performances can be achieved.

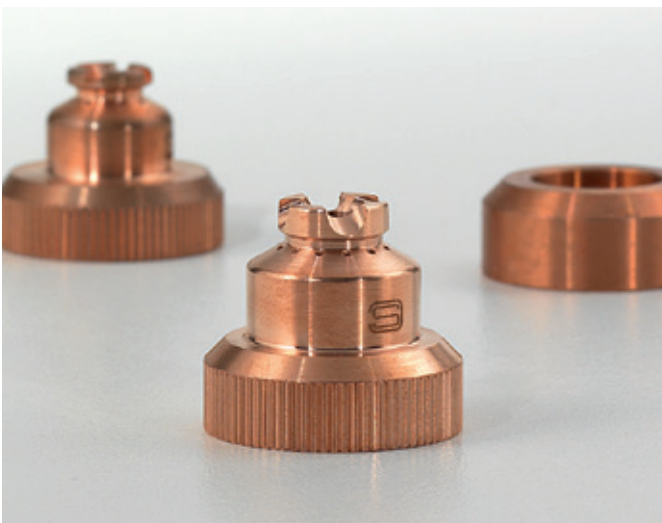
Geometric shape study of torch components, quality in their employed materials, precision in machining and coupling - the results of years of experience - form the basis of SK and SKM torch development and utilization with our cutting power sources.

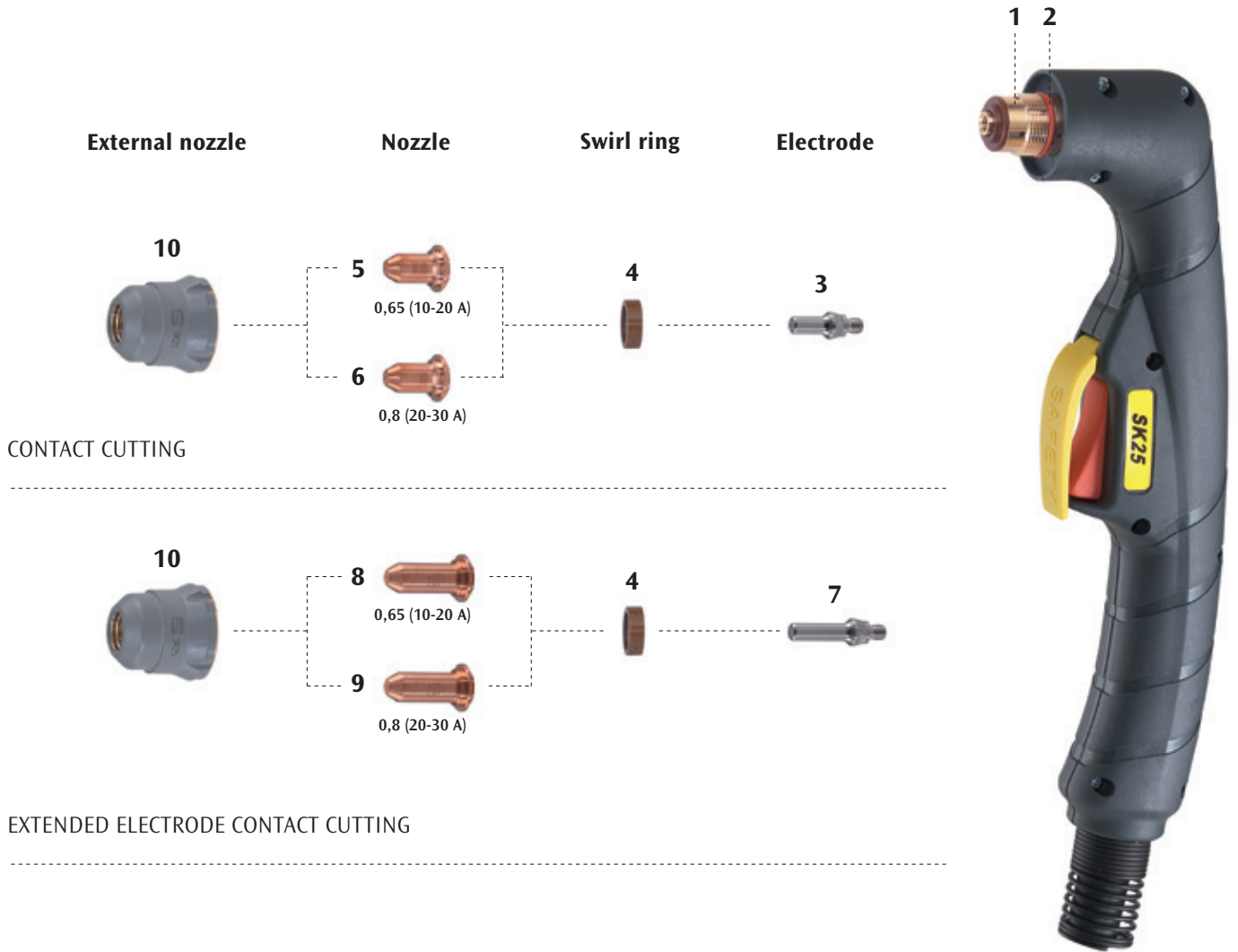
The use of CS marked original consumables is strictly recommended.

The reason for this is that the use of non original parts, besides affecting the optimal performance of the equipment, will tend to generate overheating and changes in the electrical voltages with the consequent risk of:

- Overheating and damage to the torch
- Poor performance and damage to the power source
- Worsening in cutting quality
- Compromised safety of the equipment

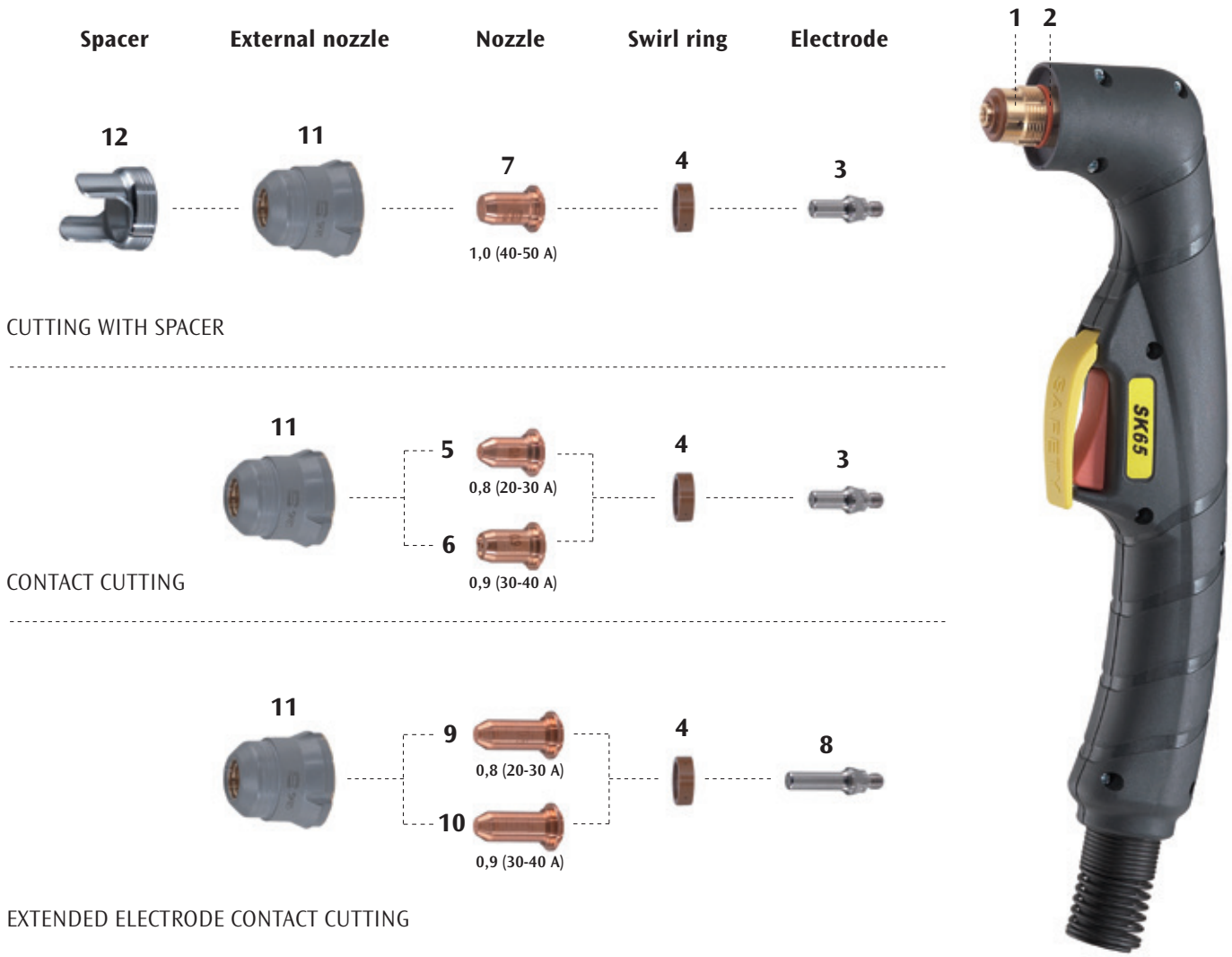
Considering the foregoing, using non original CS marked components will render void all warranty and CEA PLASMATECH can no longer be deemed responsible for any consequent accident or injury which might occur.





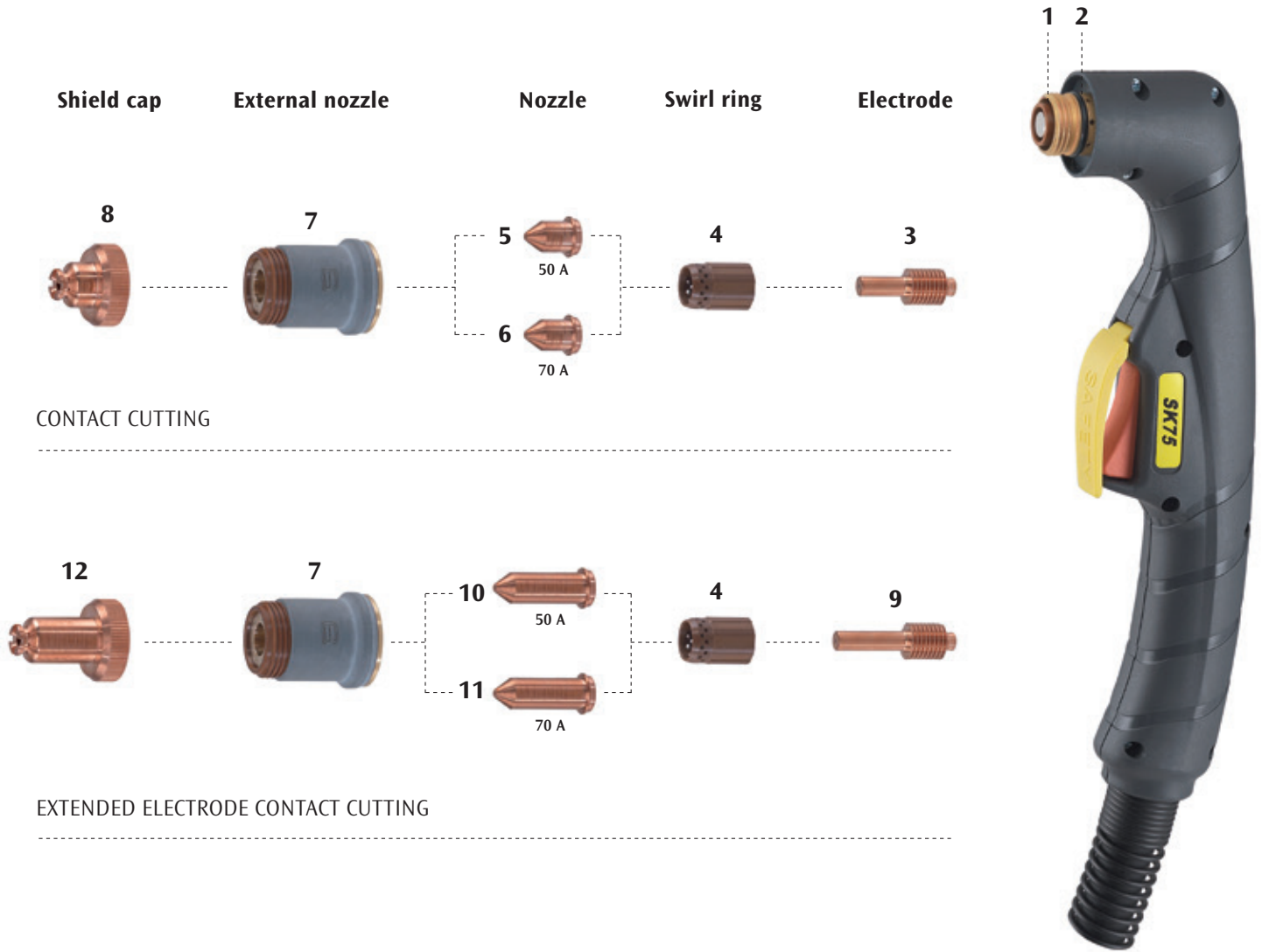
POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422665	Torch body	1		
2	433607	O-ring	10		
3	425021	Electrode	10	•	
4	482126	Swirl ring	5	•	
5	408600	Nozzle contact cutting $\varnothing$ 0,65 (10-20 A)	10		
6	408601	Nozzle contact cutting $\varnothing$ 0,8 (20-30 A)	10	•	
7	425058	Extended electrode	5		
8	408620	Extended nozzle contact cutting $\varnothing$ 0,65 (10-20 A)	5		
9	408621	Extended nozzle contact cutting $\varnothing$ 0,8 (20-30 A)	5		
10	486076	External nozzle	1	•	

- Assembled on SK25 torch when supplied with the equipment



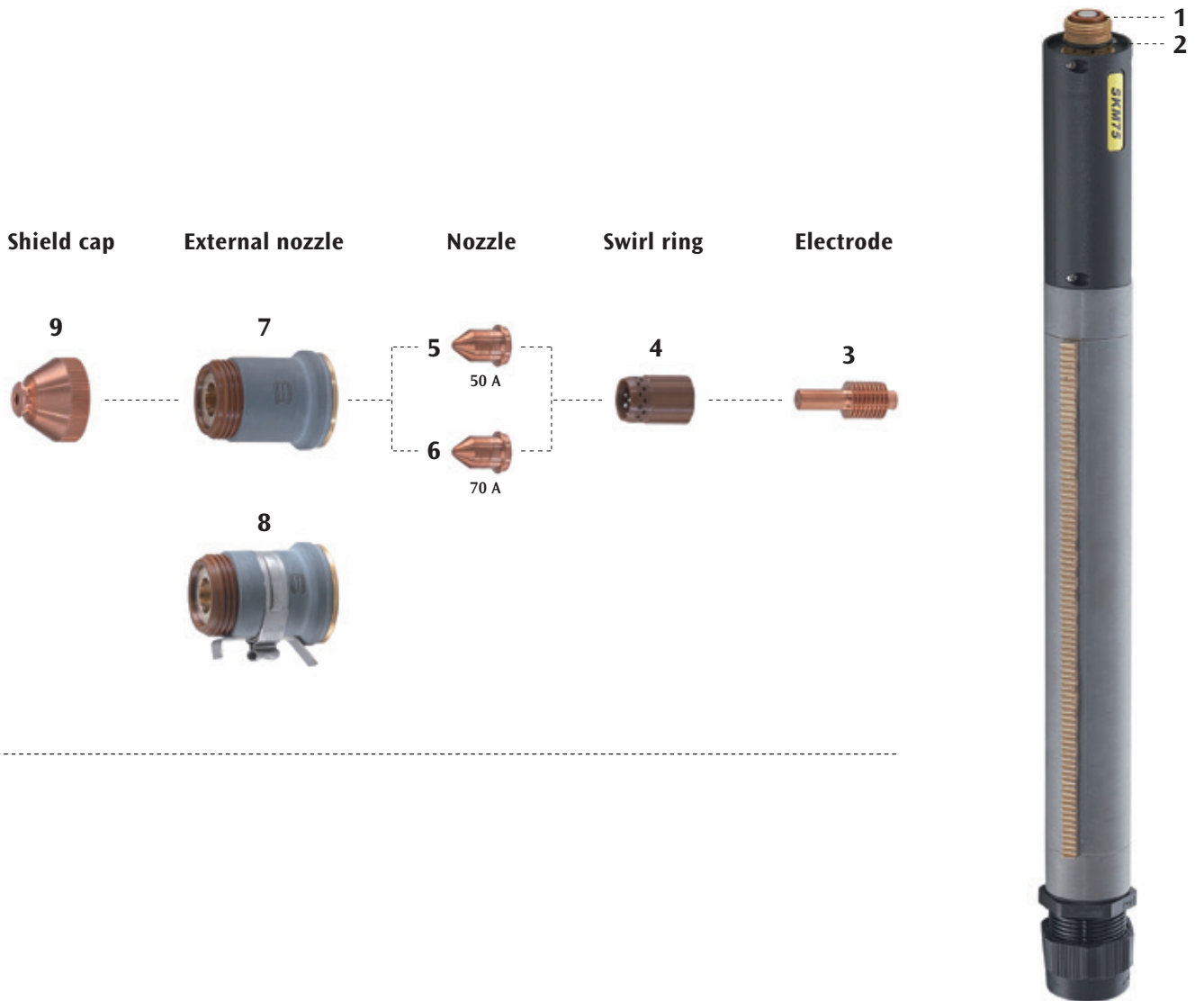
POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422664	Torch body	1		
2	433607	O-ring	10		
3	425021	Electrode	10	•	
4	482126	Swirl ring	5	•	
5	408601	Nozzle contact cutting $\varnothing$ 0,8 (20-30 A)	10		
6	408602	Nozzle contact cutting 4 embossed $\varnothing$ 0,9 (30-40 A)	10		
7	408603	Flat Nozzle $\varnothing$ 1,0 (40-50 A)	10	•	
8	425058	Extended electrode	5		
9	408621	Extended nozzle contact cutting $\varnothing$ 0,8 (20-30 A)	5		
10	408622	Extended nozzle contact cutting $\varnothing$ 0,9 (30-40 A)	5		
11	486078	External nozzle	1	•	
12	424480	Double pointed spacer	2	•	

• Assembled on SK65 torch when supplied with the equipment



POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422674	Torch body	1		
2	433605	O-ring	20		
3	425022	Electrode	5	•	
4	482134	Swirl ring	2	•	
5	408609	Nozzle 50 A	10		
6	408610	Nozzle 70 A	10	•	
7	486049	External nozzle	1	•	
8	487630	Shield cap (manual cut)	2	•	
9	425059	Extended electrode	5		
10	408623	Extended nozzle 50 A	5		
11	408624	Extended nozzle 70 A	5		
12	424490	Extended Shield cap (manual cut)	2		

• Assembled on SK75 torch when supplied with the equipment



POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422676	Torch body	1		
2	433605	O-ring	20		
3	425022	Electrode	5	•	
4	482134	Swirl ring	2	•	
5	408609	Nozzle 50 A	10		
6	408610	Nozzle 70 A	10	•	
7	486049	External nozzle	1	•	
8	486027	External nozzle with ohmic sensor	1		
9	487629	Shield cap (mechanized cutting)	2	•	

- Assembled on SKM75 torch when supplied with the equipment

## Shield cap

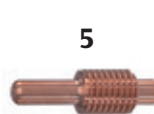
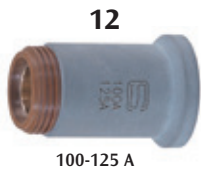
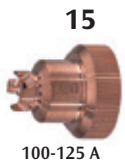
## External nozzle

## Nozzle

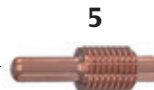
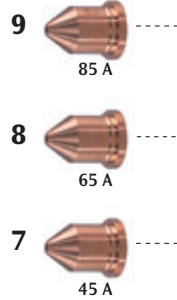
## Electrode

## Swirl ring

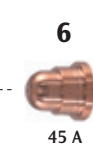
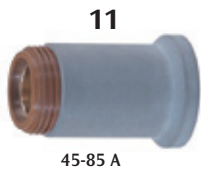
1 2



### 105 A CONTACT CUTTING



### 45-85 A CONTACT CUTTING



### 45 A max CLEAN-CUT

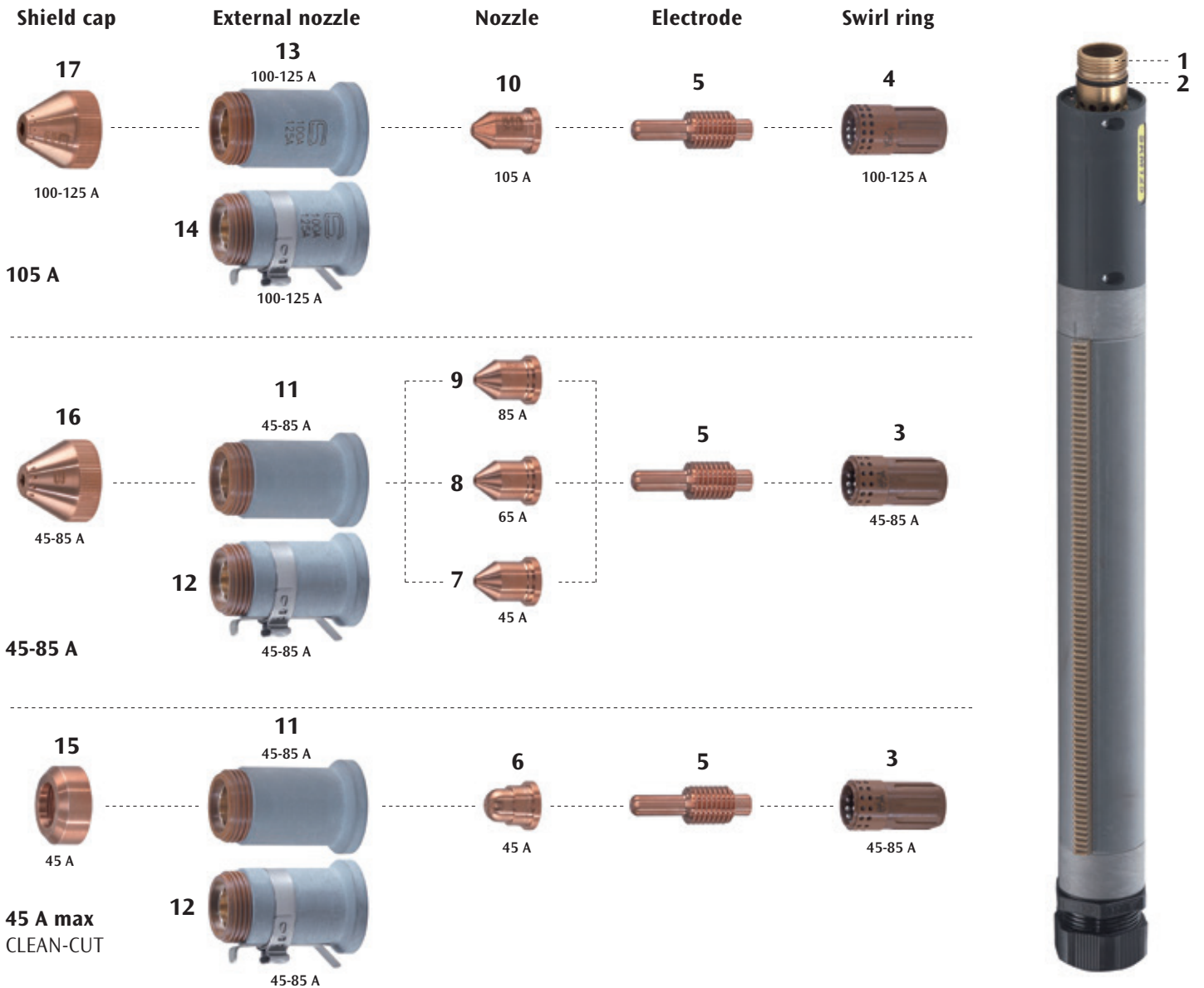


### 105 A GOUGING



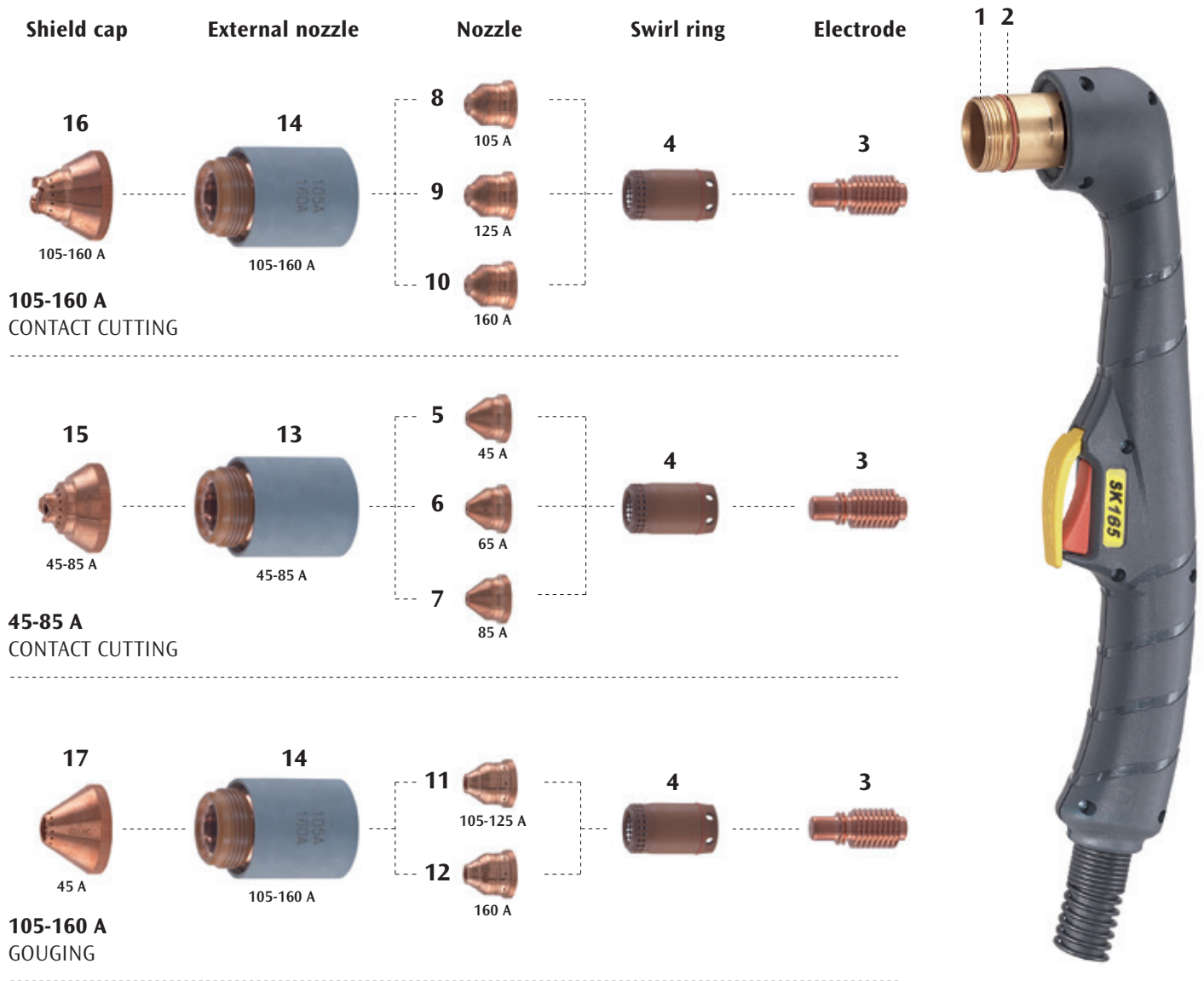
POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422675	Torch body	1		
2	433608	O-ring	20		
3	482135	Swirl ring 45-85 A	2		
4	482136	Swirl ring 100-125 A	2	•	
5	425023	Electrode	5	•	
6	408613	Nozzle 45 A, Clean-Cut	10		
7	408614	Nozzle 45 A	10		
8	408615	Nozzle 65 A	10		
9	408616	Nozzle 85 A	10		
10	408612	Nozzle 105 A	10	•	
11	486028	External nozzle, 45-85 A	1		
12	486029	External nozzle, 100-125 A	1	•	
13	482030	Shield cap 45 A - Clean-Cut	3		
14	487632	Shield cap 45-85 A (manual cut)	2		
15	487631	Shield cap 100-125 A (manual cut)	2	•	
16	487640	Shield cap (gouging)	3		
17	408631	Nozzle 105 A (gouging)	5		

• Assembled on SK125 torch when supplied with the equipment



POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422677	Torch body	1		
2	433608	O-ring	20		
3	482135	Swirl ring 45-85 A	2		
4	482136	Swirl ring 100-125 A	2	•	
5	425023	Electrode	5	•	
6	408613	Nozzle 45 A, Clean-Cut	10		
7	408614	Nozzle 45 A	10		
8	408615	Nozzle 65 A	10		
9	408616	Nozzle 85 A	10		
10	408612	Nozzle 105 A	10	•	
11	486028	External nozzle 45-85 A	1		
12	486025	External nozzle 45-85 A with ohmic sensor	1		
13	486029	External nozzle 100-125 A	1	•	
14	486026	External nozzle 100-125 A with ohmic sensor	1		
15	482030	Shield cap 45 A - Clean-Cut	3		
16	487635	Shield cap 45-85 A (mechanized cutting)	2		
17	487636	Shield cap 100-125 A (mechanized cutting)	2	•	

• Assembled on SKM125 torch when supplied with the equipment



POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422678	Torch body	1		
2	433609	O-ring	20		
3	425024	Electrode	5	•	
4	482137	Swirl ring	2	•	
5	408640	Nozzle 45 A	10		
6	408641	Nozzle 65 A	10		
7	408642	Nozzle 85 A	10		
8	408643	Nozzle 105 A	10		
9	408644	Nozzle 125 A	10		
10	408645	Nozzle 160 A	10	•	
11	408632	Nozzle for gouging 105-125 A	10		
12	408633	Nozzle for gouging 160 A	10		
13	486021	External nozzle 45-85 A	1		
14	486022	External nozzle 105-160 A	1	•	
15	487633	Shield cap 45-85 A (manual cut)	2		
16	487634	Shield cap 105-160 A (manual cut)	2	•	
17	487641	Shield cap (gouging)	2		

• Assembled on SK165 torch when supplied with the equipment



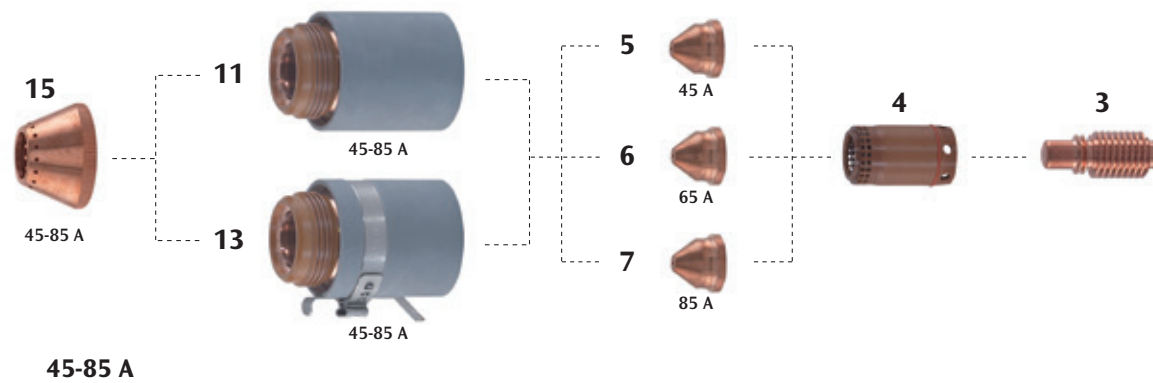
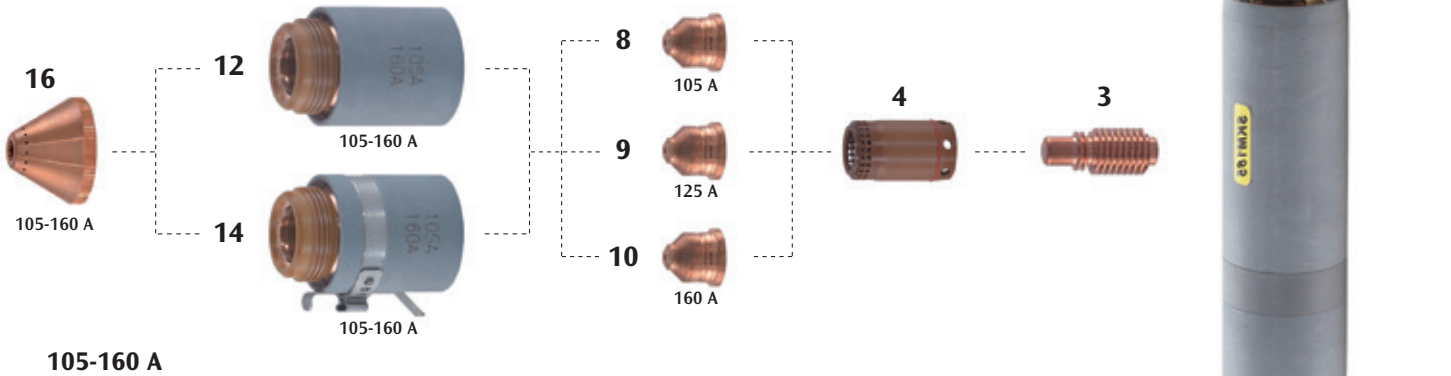
## Shield cap

## External nozzle

## Nozzle

## Swirl ring

## Electrode



POS.	CODE	DESCRIPTION	BLISTER QTY.		
1	422679	Torch body	1		
2	433609	O-ring	20		
3	425024	Electrode	5	•	
4	482137	Swirl ring	2	•	
5	408640	Nozzle 45A	10		
6	408641	Nozzle 65A	10		
7	408642	Nozzle 85A	10		
8	408643	Nozzle 105A	10		
9	408644	Nozzle 125A	10		
10	408645	Nozzle 160A	10	•	
11	486021	External nozzle 45-85 A	1		
12	486022	External nozzle 105-160 A	1	•	
13	486023	External nozzle 45-85 A with ohmic sensor	1		
14	486024	External nozzle 105-160 A with ohmic sensor	1		
15	487637	Shield cap 45-85 A (machine cut)	2		
16	487638	Shield cap 105-160 A (machine cut)	2	•	

• Assembled on SKM165 torch when supplied with the equipment

## BEVEL TOOL KIT

Necessary for beveling edges in a precise way, this accessory is composed by:

- Compass for both straight and inclined cutting
- Adjustable axle support for both straight and inclined cutting
- Wheeled torch holder



## COMPASS

To perform circular cutting on all metals. The compass is standard equipped with the **wheeled torch holder** ideal for manual cutting jobs.



## COMPRESSED AIR FILTER

By reducing humidity from the compressed air, it permits to supply dry filtered air, which ensures a better performance during cutting operations.



## ULTRALUX AUTO-DARKENING MASK

Safe protection during cutting process from UV and IR rays, heat and sparks. DIN 9÷13 fully adjustable darkening level. EN 175 standard compliance.



CODE 439232

## PLASMATECH PROTECTION GOGGLES

UV/IR 5.0 protection goggles recommended for cutting up to 50A. EN 166 standard compliance.



CODE 439255





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