

**Kjellberg**<sup>®</sup>  
**FINSTERWALDE**

the  
**FINE FOCUS**<sup>™</sup>  
company

## Plasma Cutting System

# FineFocus 450

with FineFocus Torch PB-S47 W-2 with swirl gas

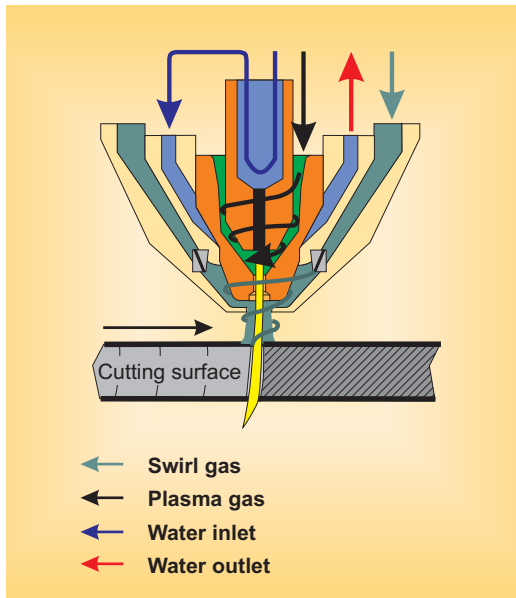


**Kjellberg Finsterwalde**  
**Pioneer in Plasma Cutting since 1959**

made in Germany

## Rework-free plasma cuts through approved swirl gas technology

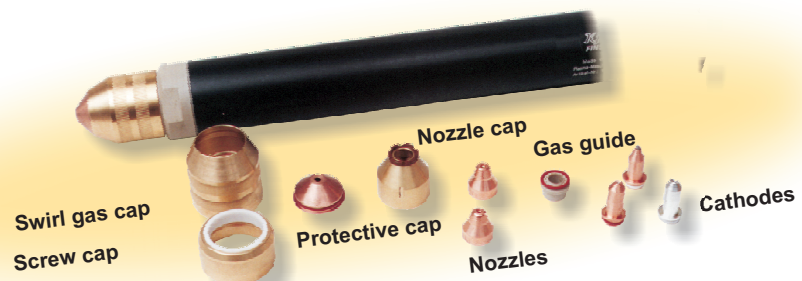
For over 50 years, Kjellberg Finsterwalde has been accomplishing pioneering work in development and production of plasma cutting technologies. The development of the **swirl gas technology** was the result of the objective target for achieving a nearly rework-free and cost-effective plasma cut. Plasma torches of the **FineFocus** series are producing due to the Double-Straight-Effect high quality surfaces at both sides of the cut, reducing so the costs for rework operations to a minimum.



Particular advantages of this technology are:

- Potential-free swirl gas nozzle guarantees a constant cut quality over a long cutting period, protecting the nozzle against upcoming hot material
- Reliable stationary piercing up to 12 mm material thickness
- Perfect running piercing up to 25 mm in connection with arc voltage depending height control
- Short lead-in paths enable small circles and hole cutting
- Dross-free cutting of stainless steels with excellent cutting quality
- Increased life time of the tungsten electrode when cutting stainless steels by reducing the nitrogen content in the plasma gas, and increasing the nitrogen content in the swirl gas

Consumables for the  
Plasma torch PB-S47 W



## Enhanced longevity through XL-Life-Time System

When cutting mild steels with the plasma gas air some surface nitriding can occur. To avoid porosity during welding this layer must be removed by expensive machining operations. The plasma gas oxygen prevents this problem and avoids the cost-intensive rework.



For cutting of three-dimensional parts  
special torches are offered.

With the **XL-Life-System** with dual-gas ignition nozzles and cathodes were precisely adapted and provide for longevity of the consumables.

In addition the following effective measures increase the life of nozzles and cathodes and reduce the operating costs considerably:

- Direct and extreme effective liquid cooling around the stress loaded area of the consumables
- Soft-start-circuit for the cutting current
- Process-optimized gas control during piercing and at the cut end

## Outstanding suitability for CNC controlled demands

The technical properties and the variety of peripheral components are recommending the FineFocus 450 especially for CNC controlled applications in a capacity range of 40 to 130 A. In particular the following facts are remarkable:

- Smooth cutting current and excellent cutting quality ensured by 12-pulse circuit
- Nozzle saving, contactless high voltage ignition of the pilot arc
- Precise and reproducible adjustment of the process data by adaptive units, like plasma gas adjustment and mixing devices
- Fulfillment of highest safety standards
- Select-Control-Function for setting the cutting current
- User-friendly and extensive diagnostic and service system for the supervision of all important operation modes



## Technological parameters

Thickness	10 mm	20 mm	30 mm	40 mm	50 mm
(material depending)	Piercing with height control 25 mm				
	Recommended cutting range 35 mm				
	Maximum cutting range 45 mm				

## Cutting data (extract from the cutting charts)<sup>1)</sup>

Material		Mild steel	Stainless steel	Aluminium
Gas		Air/O <sub>2</sub>	ArH <sub>2</sub>	ArH <sub>2</sub>
		Max. cutting speed (mm/min)	Max. cutting speed (mm/min)	Max. cutting speed (mm/min)
Material thickness (mm)	5	5000	2500	5000
	10	2800	1750	4000
	15	1800	1100	3000
	20	1400	650	1500
	25	900	600	1200
	30	600	500	900
	35	400	400	700
	40	200	300	500
	45	100	150	400

<sup>1)</sup> The specified cutting speeds depend on quality of material and will be influenced by the precision of the guiding system. Speeds can be increased considerably if highest quality will not be required.

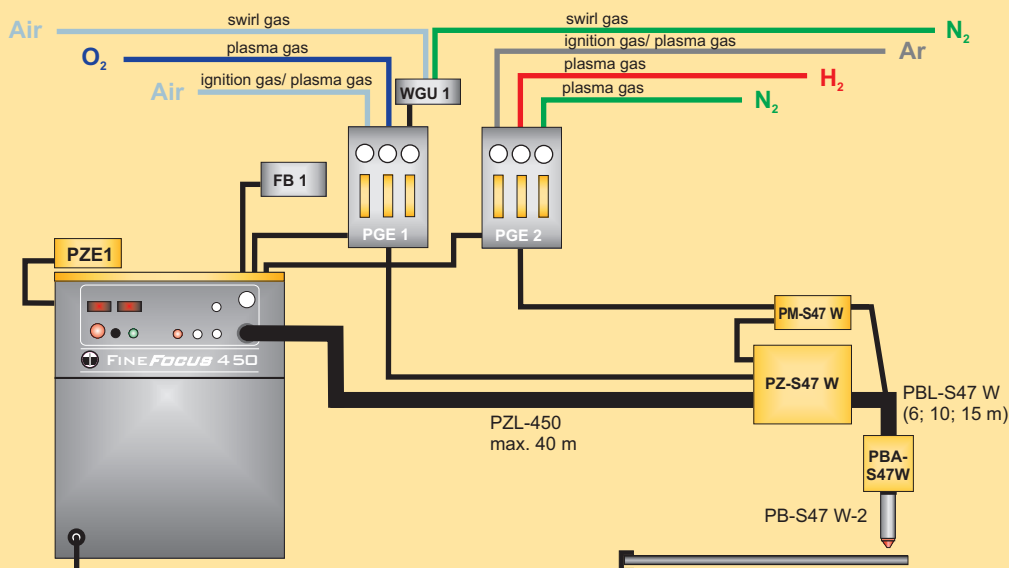
## Technical data

Power source	FineFocus 450
Mains voltage <sup>1)</sup>	3 x 400 V, 50 Hz
Connected load, max.	34 kVA
Fuse, slow	50 A
Cross section mains cable, Cu	4 x 10 mm <sup>2</sup>
Open circuit voltage	400 V
Cutting current at 100 % d.c.	40 up to 130 A, stepless 100 A
at 75 % d.c.	130 A
Cutting voltage	160 V
Protection class	IP 22
Weight	251 kg
Dimensions (L x W x H)	1025 x 711 x 970 mm

1) Other voltages and frequencies on request

Torch	PB-S47 W-2
Hose parcel length	1 m; 1,5 m
Torch cooling	coolant "Kjellfrost"
Flow rate	3,2 l/min
Cutting current	max. 130 A
Max. cutting range	1 up to 45 mm
Clamping diameter	42 mm
Plasma gases	Air, O <sub>2</sub> , Ar, H <sub>2</sub> , N <sub>2</sub>
Swirl gases	Air, N <sub>2</sub>

### Configuration diagram FineFocus 450 with plasma torch PB-S47 W-2 and hose parcel extension, all gases



Kjellberg plasma cutting systems are CE-conform and correspond with the valid guidelines and instructions of the European Union. They are developed and fabricated on basis of following standards and instructions: EN 60974 (VDE 0544). The plasma cutting systems are labelled with the S-sign and therefore applicable to environments with increased hazard of electric shock. The fabrication takes place according to DIN EN ISO 9001. The factory-owned quality assurance comprises piece and cutting performance tests, documented by test certificate.

Our products represent a high level of quality and reliability. We reserve the rights to change design and/or technical specification during the series fabrication. Claims of any kind can not be derived from this prospectus.

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