

Kjellberg[®]
FINSTERWALDE

the
FINE FOCUS[™]
company

Plasma Cutting Systems

HiFocus 280i / 360i / 440i

Plasma cutting as cost-efficient
and flexible as never before



Plasma cutting from
0.5 mm up to 120 mm

made in Germany

Plasma Cutting as cost-efficient and flexible as never before

In case of frequently changing cutting tasks, i.e. when cutting different materials or a wide range of material thicknesses, the plasma cutting systems HiFocus 280i, HiFocus 360i and HiFocus 440i are the **ideal solution**, for dry plasma cutting as well as for underwater plasma cutting.

HiFocus Plasma stands for highest standards. The excellent quality of the cut surface and very low perpendicularity and inclination tolerances together with high precision are the guarantee that nearly no after-treatment is required.



Precision in Detail

The successful HiFocus technology was further developed and equipped with the new Contour Cut technology. When cutting mild steel, the results are of excellent quality and no time-consuming after-treatment is required. Especially, when cutting fine inner and outer contours, narrow webs and small holes, the quality could be improved considerably with respect to contour accuracy, perpendicularity and surface quality

- Holes with angular deviations ranging between 2 and 4 according to the standard DIN EN ISO 9013
- Excellent repeatability and dimensional accuracy
- High productivity at low costs



FlowControl

Efficient Gas Control

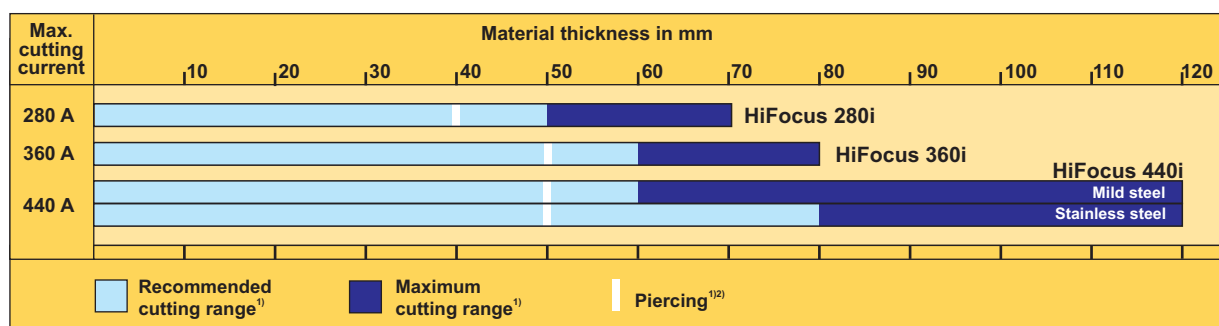
The material-specific composition and the flow rate of the plasma and swirl gases have a substantial influence on the cutting result. The HiFocus systems are available with manual gas controllers or with the automatic gas control unit FlowControl.

Various Fields of Application

The plasma power sources HiFocus 280i, HiFocus 360i and HiFocus 440i have an analogue and a serial interface for the adaption to CNC controls. Thus, they can flexibly be combined with guiding systems, robots and pipe cutting systems.

If a guiding system does not have its own cutting database, the database of the gas control unit can be used when the system is retrofitted. Thus, it is possible to equip existing guiding systems with modern plasma cutting units of the HiFocus series.

Range of Application



1) These data are depending on the materials to be cut and their compositions

2) Piercing capability is dependent on material, thickness as well as performance of THC and CNC. Please refer to operation manual.

PerCut Torches Put High Performance into Practice

The plasma units HiFocus 280i, HiFocus 360i and HiFocus 440i are equipped with plasma torches of the PerCut series. PerCut torches are fabricated by taking into account the highest demands in respect of their technology, simplicity and user-friendliness. Their main features are the use of swirl gases and smaller nozzle diameters, increased gas rotation and the increased constriction of the plasma arc.

Quick-Change Torches Reduce Setup Times

The torches of the PerCut series cover the entire cutting range from 5A to 440A with only one torch head. They are equipped with quick-change systems which allow the reduction of setup times and easier change of consumables.

The threaded coupling of the PerCut 450M allows the manual change of the torch head.

The PerCut 450A is equipped with a bayonet coupling which has been especially developed for the automated change of torch heads with the ATChanger.

The PerCut 440 without quick-change head is used for special bevel cutting systems.

All three plasma torches operate with the same consumables; their diversity has been reduced and optimised. The effective liquid cooling system up to the torch tip results in considerably longer lifetimes of the consumables.



PerCut 450M with threaded coupling



PerCut 450A with bayonet coupling



PerCut 440 without quick-change head

Cutting and Marking

The machine torches can be used for cutting, marking and punching without changing the consumables.

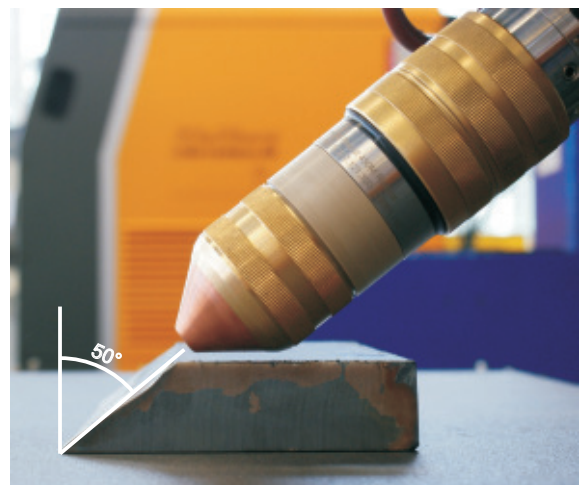
The line width and the depth of the marking can be optimally adjusted to the cutting task by setting the current, marking speed and torch height. When punching, the penetration depth can also be changed.



Cutting sample marked with PerCut 450M

Bevel Cutting

Due to the improved geometry of the consumables, bevel cutting up to 50 degrees is possible, i.e. for weld preparation.



Bevel cut with PerCut 450M

Technical Data

Power source	HiFocus 280i	HiFocus 360i	HiFocus 440i
Mains voltage ¹⁾	3x 400 V, 50 Hz	3x 400 V, 50 Hz	3x 400 V, 50 Hz
Connected load, max.	67 kVA	87 kVA	127 kVA
Fuse, slow	100 A	125 A	200 A
Cross section mains cable, Cu	4 x 35 mm ²	4 x 50 mm ²	4 x 50 mm ²
Open circuit voltage	330 V	330 V	330 V
Cutting current at 100% d.c.	280 A	360 A	440 A
Cutting voltage	200 V	200 V	200 V
Cutting power	max. 56 kW	max. 72 kW	max. 88 kW
Marking current	5 - 50 A	5 - 50 A	5 - 50 A
Protection class	IP 22	IP 22	IP 22
Dimensions (L x W x H)	1030 x 680 x 1450 mm	1030 x 680 x 1450 mm	1030 x 680 x 1450 mm
Weight	505 kg	517 kg	589 kg

¹⁾ other voltages and frequencies on request

Plasma torches	PerCut 440/450
Machine torch	PerCut 440
Quick-change torch	PerCut 450A
Quick-change torch	PerCut 450M
Max. cutting current	440 A
Duty cycle	100 %
Max. cutting range	0.5 - 120 mm
Clamping diameter	50.8 mm
Plasma gases	O ₂ , Ar/H ₂ , F5, Air
Marking gases	Ar
Swirl gases	O ₂ , N ₂ , Air
Cooling	Coolant „Kjellfrost“

*) Forming gas F5 (95% N₂/5% H₂)

Operating Data HiFocus 280i - 440i¹⁾

Material	Mild steel		Stainless steel		Aluminium	
	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)
0,5	20	8000	-	-	-	-
1	20	5500	60	8000	35	6000
2	35	2800	60	7000	35	6000
4	60	4000	60	5000	60	3300
6	90	5200	130	2300	130	6500
8	130	4500	130	1800	130	5500
10	130	3800	130	1500	130	4500
12	160	4000	130	1250	130	4000
15	200	3200	280	2100	280	4300

Operating Data Mild steel from 20 mm¹⁾

Mild steel	HiFocus 280i		HiFocus 360i		HiFocus 440i	
	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)
20	280	2600	360	3300	400	3600
30	280	1500	360	1900	400	2100
40	280	800	360	1300	400	1400
50	280	500	360	850	400	950
60	280	300	360	480	400	600
70	280	150	360	170	400	360
80			360	120	440	280
100					440	150
120					440	100

Operating Data Stainless steel from 20 mm¹⁾

Stainless steel	HiFocus 280i		HiFocus 360i		HiFocus 440i	
	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)
20	280	1800	360	1700	440	2100
30	280	1100	360	1400	440	1350
40	280	780	360	970	440	1000
50	280	570	360	600	440	750
60	280	430	360	530	440	630
70	280	280	360	420	440	480
80			360	330	440	440
100					440	190
120					440	100

Operating Data Aluminium from 20 mm¹⁾

Aluminium	HiFocus 280i		HiFocus 360i		HiFocus 440i	
	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)	Cutting current (A)	Cutting speed (mm/min)
20	280	3800	360	4000	440	4500
30	280	2200	360	3000	440	2800
40	280	1550	360	1800	440	2400
50	280	1200	360	1500	440	1700
60	280	800	360	1300	440	1300
70	280	450	360	1000	440	1000
80	280	200	360	750	440	850
100			360	180	440	300
120						

1) Listed cutting speeds are depending on material characteristics, gas parameter, guiding system as well as proper consumables. According to quality requirements cutting speeds may differ.

Kjellberg-plasma cutting units are CE-conform and correspond with the valid guidelines and instructions of the European Union. They are developed and fabricated on basis of the standard EN 60974 (VDE 0544). The plasma cutting units 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 brochure.

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