



Kjellberg[®]
FINSTERWALDE

Kjellberg Finsterwalde

Pioneers in plasma cutting since 1959



A company with traditional background

- 1922** Foundation of “Kjellberg Elektro-Maschinen GmbH“ (since 1926 Kjellberg Elektroden & Maschinen GmbH) in Finsterwalde
- 1930** Development and production of legendary converters KU/KW
- 1934** First automatic welder from Kjellberg Finsterwalde
- 1936** Kjellberg Finsterwalde becomes largest producer of arc welding equipment in Europe

KU 250



KW 250



KW 500



A company with traditional background

1940 With 5.000 employees Kjellberg Finsterwalde is the largest manufacturer of arc welding equipment in the world



A company with traditional background

- 1943** First industrial use of automatic welder for submerged arc welding
- 1959** Year of birth of plasma technology at Kjellberg Finsterwalde
- 1962** 50 kW plasma cutting unit WSH III-M
Patent application is filed for Fine-Focus Plasma cutting
- 1964** 100 kW plasma cutting unit PA 100



A company with traditional background

- 1970** Plasma gas air for economical cutting of mild steel up to 25 mm (160 A)
- 1971** Plasma-Multiple Plants (2, 3, 4, 6 units)
 - named “Mansfeld“ for German and
- 1978** Japanese shipyards
- 1980** Beginning of Underwater plasma cutting
- 1985** Plasma gas O₂ improves cutting quality of mild steel
- 1986** Underwater plasma cutting unit PA 50 UWP
- 1990** Complete product revision, industrial
 - introduction of new developments
- 1993**



A company with traditional background

- 1994** Worldwide first CNC-multiple squaring plant with two three-torch units for the project “Shipbuilding 2000“ (technology of Prof. Bach, Dortmund university)
- 1995** Oxygen technology with XL[®]-Lifetime-System for the increase of endurance and consequently for reduction of operating costs
- 1998** Launching of swirl gas plasma torch PB-S47 W-1 for dry and underwater plasma cutting
- 1999** Under water plasma cutting up to material thickness of 100 mm
- 2000** New HiFocus technology for laser like cut quality with significant lower costs compared to laser
- 2001** First soft-switched-inverter module with microprocessor control applied



A company with traditional background

- 2002** Worldwide first flow controlled automatic plasma gas supply – a step into a new dimension of quality and reproducibility
- 2004** Launching of *PLUS*-technology for HiFocus 100/160i and FineFocus 800
- 2005** Enlargement of HiFocus series by HiFocus 80i
- 2006** Complement of series of plasma cutting units with inverter by HiFocus 280i and HiFocus 360i
- 2007** Launching of the new generation of consumables - YellowXLife[®]

Presentation of the prototype of worldwide strongest high precision plasma cutting system HiFocus 440i



A company with traditional background

2008

1. Quarter: commercial launch of HiFocus 440i

Start construction of the new customer and application centre of Kjellberg Finsterwalde Plasma und Maschinen GmbH



A company with traditional background

- 2009** Kjellberg Finsterwalde has been developing plasma technology for 50 years and is longest established manufacturer in the market
Enlargement of FineFocus series by FineFocus 600
Completion of new customer and application centre
- 2010** Grand opening



A company with traditional background

- 2010** New plasma torch series PerCut 440/450 und PerCut 200/210 with new consumables
Development and Presentation of the prototype HiFocus 161i with new GreenLine[®] Technology
- 2011** Launching of Contour Cut technology for cutting contours in mild steel
- 2012** New plasma torch series PerCut 441/451 and PerCut 201/211
Launching of Contour Cut Speed technology for faster cutting of contours in best quality



 **contour cut**
SPEED

A company with traditional background

- 2013** Launching new plasma generation neo:
New plasma cutting system HiFocus 600i neo
New copper cathodes neo
- 2014** Development and Presentation of new plasma
Generation **Smart Focus**

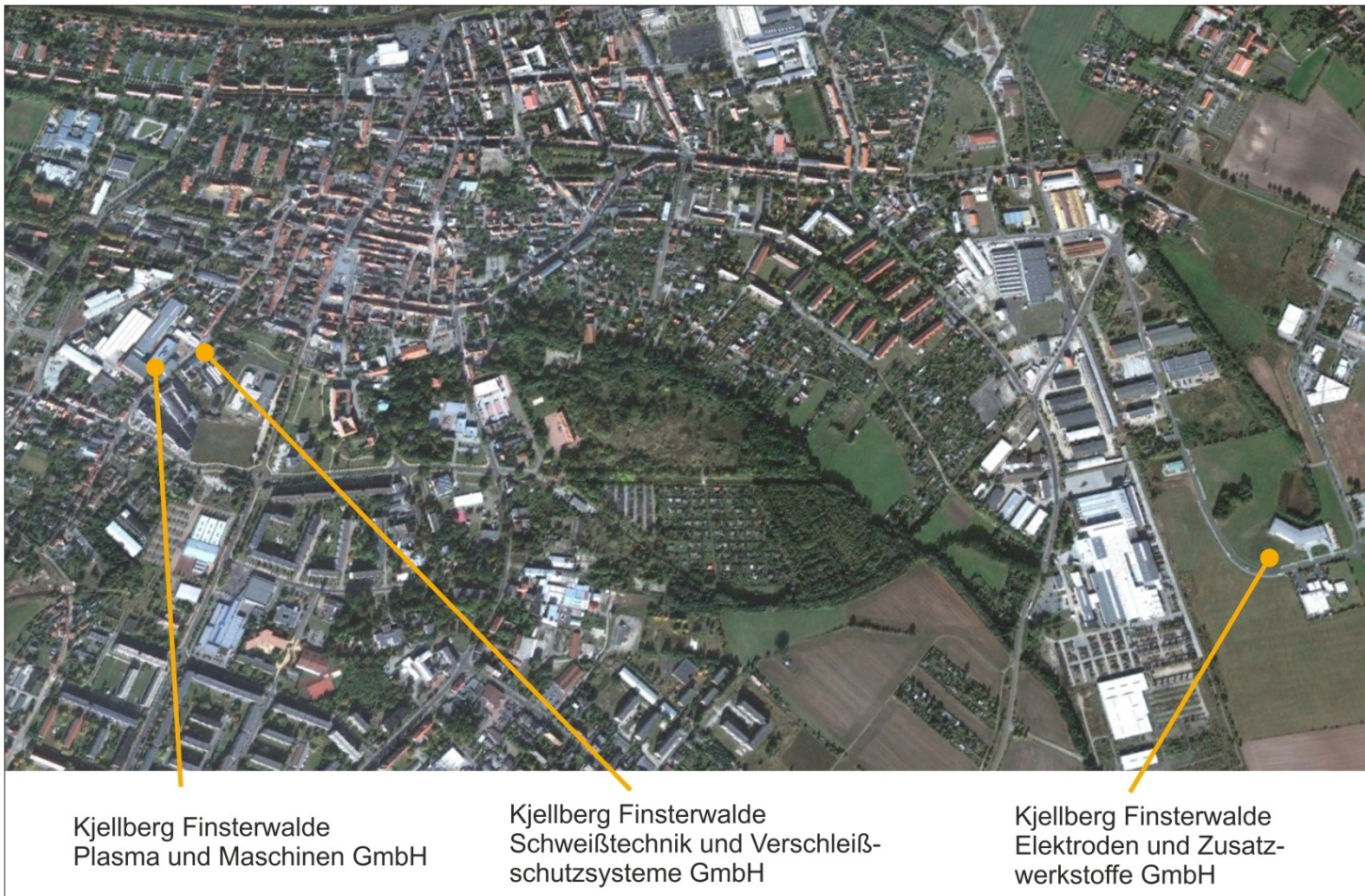




Location Kjellberg Finsterwalde



Location Kjellberg Finsterwalde



Location Kjellberg Finsterwalde



Customer- and Application centre

Customer and application centre

Equipment

6 guiding systems
of different
manufacturers for
dry or under water
cutting

2 robots
of different
manufacturers



Customer and application centre

Our services

- Customer consulting
- Cutting demonstrations
- generating cutting samples (also specific customer requests)
- cutting fine tuning
- training
- conventions



Research and development centre

Cooperation with universities

- Institut für Werkstoffkunde Leibniz Universität Hannover
- Technische Universität Dresden
- Fachhochschule Lausitz
- Fraunhofer Institut für Produktionsanlagen und Konstruktionstechnik
- Fraunhofer Institut für Fertigungstechnik und Materialforschung
- Brandenburgische Technische Universität Cottbus



After sales service

services

- Installations and commissionings on site
- Support and consultation
- Repair
- service training
- Technology training
- After-sales-Service

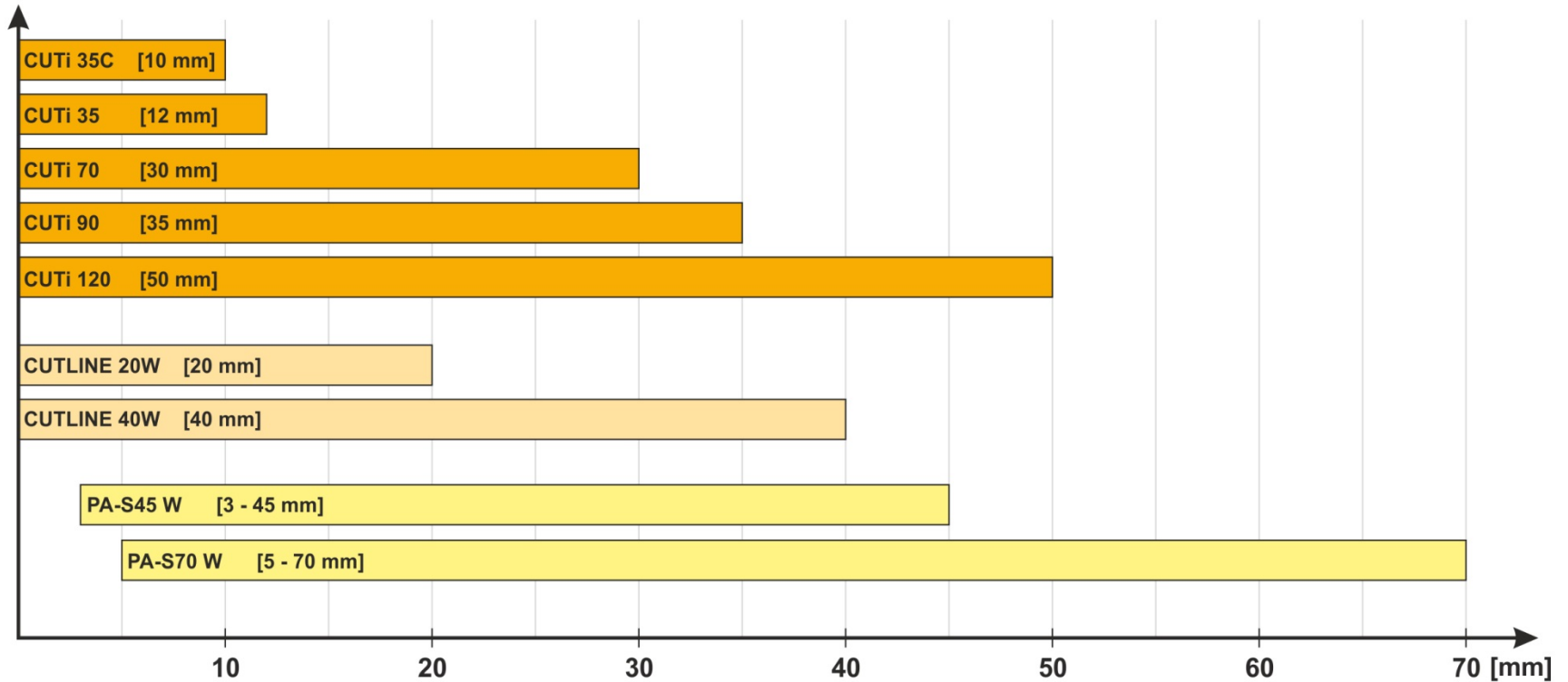


Kjellberg's technical support in German and English language is available 24/7 around the clock! Hotline + 49 172 799 41 41



Manual Plasma Cutting Units

Overview Cutting ranges



CUTi 35C

- Plasma cutting inverter with integrated compressor

Technical data	
Mains voltage	230 V
Cutting current	12 – 25 A [35 A] ¹
Duty cycle	25 % at 35 A 35 % at 25 A 100 % at 20 A ²
Cutting range	up to 6 mm [10 mm] ¹
Plasma torch	PHT-25 G/L ³
Plasma gas	Air
Dimensions (L x W x H)	550 x 150 x 245 mm
Weight	12.5 kg

¹ With external air supply

² When using the internal compressor, the duty cycle is reduced to 35%

³ Firmly mounted torch



CUTi 35

- Plasma cutting inverter with sine wave inverter technology

Technical data	
Mains voltage	230 V
Cutting current	5 – 35 A
Duty cycle	40 % at 35 A 60 % at 28 A 100 % at 22 A
Cutting range	
• recommended	up to 10 mm
• maximum	up to 12 mm
Plasma torch	KjellCut 35C ¹
Plasma gas	Air
Dimensions (L x W x H)	480 x 150 x 225 mm
Weight	8 kg

¹ Firmly mounted torch



CUTi 70

- Plasma cutting inverter

Technical data	
Mains voltage	400 V
Cutting current	26 – 70 A
Duty cycle	35 % at 70 A 60 % at 60 A 100 % at 50 A
Cutting range	
• recommended	up to 25 mm
• maximum	up to 30 mm
Plasma torch	KjellCut 70
Plasma gas	Air
Dimensions (L x W x H)	470 x 180 x 250 mm
Weight	16.4 kg



CUTi 90

- Plasma cutting inverter

Technical data	
Mains voltage	400 V
Cutting current	26 – 90 A
Duty cycle	40 % at 90 A 60 % at 74 A 100 % at 55 A
Cutting range	
• recommended	up to 30 mm
• maximum	up to 35 mm
Plasma torch	KjellCut 120
Plasma gas	Air
Dimensions (L x W x H)	470 x 180 x 270 mm
Weight	17 kg



CUTi 120

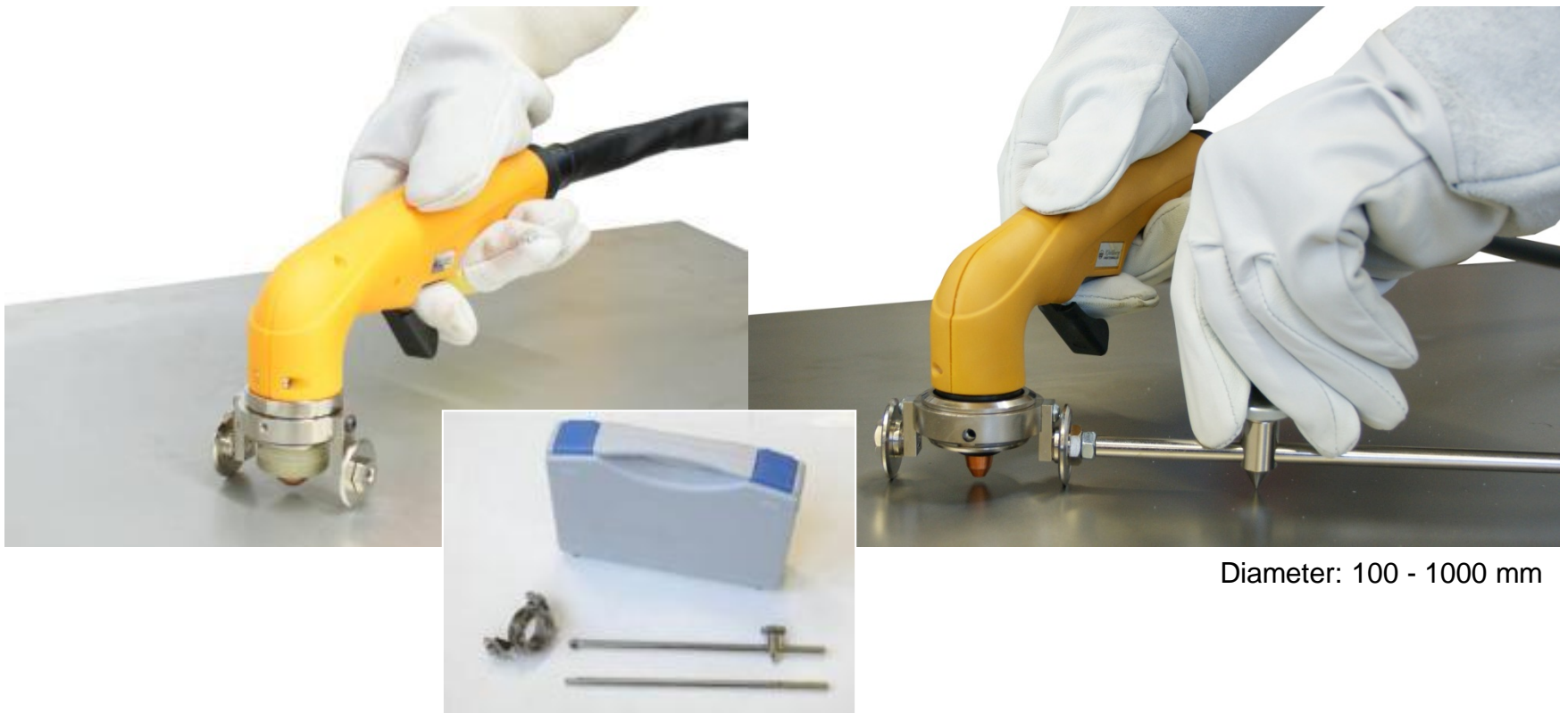
- Plasma cutting inverter

Technical data	
Mains voltage	400 V
Cutting current	25 – 120 A
Duty cycle	35 % at 120 A 60 % at 95 A 100 % at 80 A
Cutting range	
• recommended	up to 40 mm
• maximum	up to 50 mm
Plasma torch	KjellCut 120
Plasma gas	Air
Dimensions (L x W x H)	610 x 230 x 410 mm
Weight	28.7 kg



Optional accessories - CUTi

- Cutting with guide wheels and circle cutting attachment



Diameter: 100 - 1000 mm

Optional accessories - CUTi

- Cutting with spacer spring and beveling cap



Basic version



- For welding seam preparation
- Angles of 30° or 45°

Optional accessories - CUTi

- Cutting with contact cap and templates



- Template thickness: 1 - 3 mm or 10 - 14 mm
- No double arcing

Optional accessories - CUTi

- Cutting with bevel cutting equipment and with extended consumables



- Trimming of plates
- Sharpening of plates
- Weld seam preparation



For cutting of inaccessible parts

CUTLINE 20W

- Step-switched plasma hand cutting unit with liquid-cooled plasma torch.

Technical data	
Mains voltage	3x 230/400V
Cutting current	25 A / 50 A
Duty cycle	60 %
Cutting range	
• Recommended	1 – 15 mm
• Maximum	up to 20 mm
Plasma torch	PHT-30 W/L
Plasma gas	Air
Dimensions (L x W x H)	670 x 490 x 880 mm
Weight	84 kg



CUTLINE 40W

- Step-switched plasma hand cutting unit with liquid-cooled plasma torch.

Technical data	
Mains voltage	3x 400V
Cutting current	50 A / 100 A
Duty cycle	60 %
Cutting range	
• Recommended	1 – 30 mm
• Maximum	up to 40 mm
Plasma torch	PHT-45 W/L
Plasma gas	Air
Dimensions (L x W x H)	820 x 490 x 880 mm
Weight	132 kg



PA-S45 W

- Step-switched plasma cutting machine for manual plasma cutting and in connection with 2D guiding systems as well as for 3D applications with robots.

Technical data	
Cutting current	45 A / 85 A / 130 A
Duty cycle	45 A at 100 % 85 A at 100 % 130 A at 75 %
Cutting range	
• Recommended	3 – 30 mm
• Maximum	up to 45 mm
Piercing	20 mm
Plasma torch	PB-S44 WH
Plasma gases	Air, Ar, H ₂ , N ₂
Dimensions (L x W x H)	1025 x 711 x 970 mm
Weight	240 kg



PA-S70 W

- Step-switched plasma cutting machine for manual plasma cutting and in connection with 2D guiding systems as well as for 3D applications with robots.

Technical data	
Cutting current	80 A / 160 A / 240 A
Duty cycle	80 A at 100 % 160 A at 100 % 240 A at 80 %
Cutting range	
• Recommended	5 – 50 mm
• Maximum	up to 70 mm
Piercing	30 mm
Plasma torch	PB-S70 WH
Plasma gases	Air, H35
Dimensions (L x W x H)	1380 x 870 x 1080 mm
Weight	460 kg



Optional accessories - CUTLINE 20W, 40W PA-S45 W

- Cutting with roller guide or circle cutting attachment

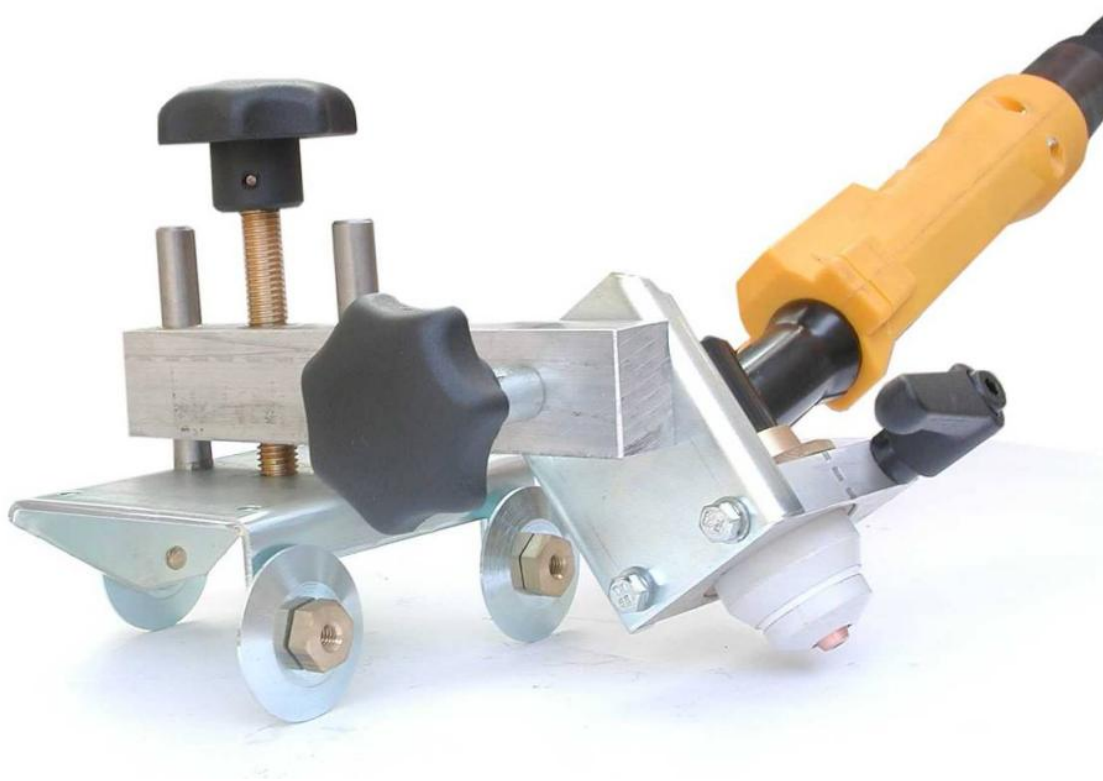


- Fixed to torch body for straight cuts
- Loosely mounted to torch body for circular cuts



Optional accessories - CUTLINE 20W, 40W PA-S45 W

- Cutting with bevel cutting attachment with hand or machine torch



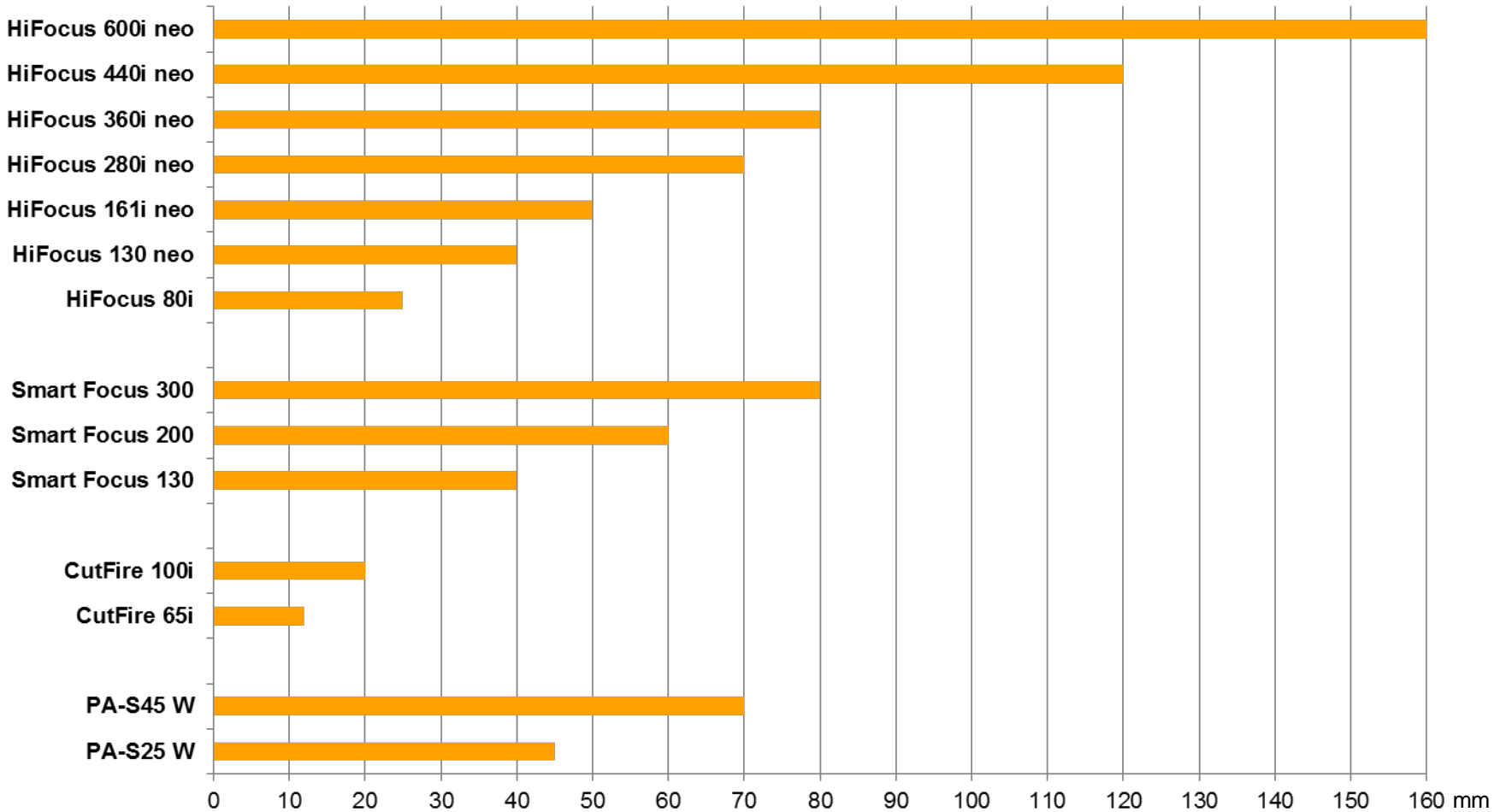


Kjellberg[®]
FINSTERWALDE

Plasma Cutting Units for CNC-Guiding Systems



Overview Cutting Range



CutFire 65i

Plasma cutting inverter for plasma cutting without swirl gas

Technical Data	
Cutting current	15 – 65 A
Duty cycle	65 A - 35 % 50 A - 100 %
Plasma gas	Air
Cutting range	
• recommended	8 mm
• maximum	12 mm
Piercing	8
Dimensions (L x W x H)	470 x 180 x 270 mm
Weight	17 kg
Plasma torch	Flash 100



CutFire 100i

Plasma cutting inverter for plasma cutting without swirl gas

Technical Data	
Cutting current	20 – 100 A
Duty cycle	100 %
Plasma gas	Air
Cutting range	
• recommended	1 – 15 mm
• maximum	20 mm
Piercing	15 mm
Dimensions (L x W x H)	710 x 280 x 590 mm
Weight	50 kg
Plasma torch	Flash 100



PA-S45 W

Step switched plasma cutting unit for mechanised cutting without or optional with swirl gas

Technical Data	
Cutting current	45 / 85 / 130 A
Duty cycle	45 A – 100 % 85 A – 100 % 130 A – 60 %
Plasma gas	Air, O ₂
Cutting range	
• recommended	3 – 30 mm
• maximum	45 mm
Piercing	20 mm
Dimensions (L x W x H)	1040 x 710 x 990 mm
Weight	240 kg
Plasma torch	PB-S45W



Components PA-S45 W



Plasma gas control unit
PGE 1-45
Air



Plasma gas control unit
PGE 2-45
Air, H35, N₂



Plasma machine torch
PB-S44 W-1

PA-S70 W

Step switched plasma cutting unit for mechanised cutting without swirl gas

Technical Data	
Cutting current	80 / 160 / 240 A
Duty cycle	80 A – 100 % 160 A – 100 % 240 A – 60 %
Plasma gas	Air, Ar/H ₂ -mixture
Cutting range	
• recommended	5 – 50 mm
• maximum	70 mm
Piercing	30 mm
Dimensions (L x W x H)	1360 x 870 x 1080 mm
Weight	460 kg
Plasma torch	PB-S70 W



Components PA-S70 W



Plasma gas connection unit
PGA1-70
H35



Plasma gas connection unit
PGA2-70
Air, H35



Plasma machine torch
PB-S70 W

NEW: Smart Focus 130

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technical Data	
Cutting current	35 – 130 A
Marking current	12 – 50 A
Duty cycle	100 %
Plasma gases	O ₂ , Ar/H ₂ , N ₂ , Air
Swirl gases	O ₂ , N ₂ , N ₂ /H ₂ (F5), Air
Cutting range	
• recommended	1 – 32 mm
• maximum	40 mm
Piercing	25 mm
Dimensions (L x W x H)	1030 x 570 x 1260 mm
Weight	266 kg



NEW: Smart Focus 200

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technische Daten	
Schneidstrom	35 – 200 A
Markierstrom	12 – 50 A
Einschaltdauer	100 %
Plasmagase	O ₂ , Ar/H ₂ , N ₂ , Air
Wirbelgase	O ₂ , N ₂ , N ₂ /H ₂ (F5), Air
Cutting range	
• recommended	1 – 40 mm
• maximum	60 mm
Piercing	30 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	388 kg



NEW: Smart Focus 300

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technische Daten	
Schneidstrom	35 – 300 A
Markierstrom	12 – 50 A
Einschaltdauer	100 %
Plasmagase	O ₂ , Ar/H ₂ , N ₂ , Air
Wirbelgase	O ₂ , N ₂ , N ₂ /H ₂ (F5), Air
Cutting range	
• recommended	1 – 50 mm
• maximum	80 mm
Piercing	40 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	488 kg



NEW: Smart Focus 400

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technische Daten	
Schneidstrom	35 – 400 A
Markierstrom	10 – 50 A
Einschaltdauer	100 %
Plasmagase	O ₂ , Ar/H ₂ , N ₂ , Air
Wirbelgase	O ₂ , N ₂ , N ₂ /H ₂ (F5), Air
Cutting range	
• recommended	1 – 60 mm mild steel 1 – 70 mm stainless steel
• maximum	100 mm
Piercing	50 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	563kg



NEW: Components Smart Focus



Plasma gas control unit
PGE-300
Air, O₂, Ar, H₂, N₂, F5



Automatic gas console
PGV-300
Air, O₂, Ar, H₂, N₂, F5



Machine torch PerCut 2000 with
quick-change head PerCut 4000 and
inbuilt initial height sensing



Machine torch PerCut 4000 with
quick-change head PerCut 4000 and
inbuilt initial height sensing

HiFocus 80i

Smallest precision plasma cutting machine for automated cutting with swirl gas in the range of thin plates

Technical Data

Cutting current	10 – 80 A
Duty cycle	100 %
Plasma gases	O ₂ , N ₂
Swirl gases	O ₂ , N ₂ , Air, F5
Cutting range	
• recommended	0.5 – 18 mm
• maximum	25 mm
Piercing	15 mm
Dimensions (L x W x H)	970 x 510 x 970
Weight	161 kg



Components HiFocus 80i



Plasma gas control unit
PGE 3-HM
Air, O₂, N₂, F5



Machine torch PerCut 90



Machine torch PerCut 80

HiFocus 130 neo

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technical Data	
Cutting current	20 – 130 A
Marking current	16 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂
Swirl gases	O ₂ , N ₂ , Air, F5
Marking gas	Ar
Cutting range	
• recommended	0.5 – 32 mm
• maximum	40 mm
Piercing	25 mm
Dimensions (L x W x H)	980 x 563 x 1062 mm
Weight	251 kg



HiFocus 161i neo

Plasma cutting machine for automated cutting with swirl gas and plasma marking

Technical Data	
Cutting current	10 – 160 A
Marking current	5 – 25 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂
Swirl gases	Air, O ₂ , N ₂ , F5
Marking gas	Ar
Cutting range	
• recommended	0.5 – 38 mm
• maximum	50 mm
Piercing	30 mm
Dimensions (L x W x H)	985 x 570 x 1185 mm
Weight	196 kg



Components HiFocus 130 neo and HiFocus 161i neo



Plasma gas control unit
PGE 3-161
Air, O₂, N₂, F5



Plasma gas control unit
PGE-161
Air, O₂, Ar, H₂, N₂, F5



Automatic gas console
FlowControl 2-161
Air, O₂, Ar, H₂, N₂, F5



Machine torch PerCut 201



Machine torch PerCut 211M

HiFocus 280i neo

Plasma cutting machine for automated cutting with swirl gas – also under water and plasma marking

Technical Data	
Cutting current	10 – 280 A
Marking current	5 – 50 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂ , F5
Swirl gases	Air, O ₂ , N ₂ , F5
Marking gas	Ar
Cutting range	
• recommended	0.5 – 50 mm
• maximum	70 mm
Piercing	40 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	422 kg



HiFocus 360i neo

Plasma cutting machine for automated cutting with swirl gas – also under water and plasma marking

Technical Data	
Cutting current	10 – 360 A
Marking current	5 – 50 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂ , F5
Swirl gases	Air, O ₂ , N ₂
Marking gas	Ar
Cutting range	
• recommended	0.5 – 60 mm
• maximum	80 mm
Piercing	50 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	517 kg



HiFocus 440i neo

Plasma cutting machine for automated cutting with swirl gas – also under water and plasma marking

Technical Data	
Cutting current	10 – 440 A
Marking current	5 – 50 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂ , F5
Swirl gases	Air, O ₂ , N ₂
Marking gas	Ar
Cutting range	0.5 – 60 mm
• recommended	(1 – 80 mm SS)
• maximum	120 mm
Piercing	50 mm
Dimensions (L x W x H)	1030 x 680 x 1450 mm
Weight	589 kg



Components HiFocus 280i, 360i and 440i neo



Plasma gas control unit
PGE-440
Air, O₂, Ar, H₂, F5, N₂



Plasma gas control unit
PGE3-440
Air, O₂, N₂



Automatic gas console
FlowControl 3-440
Air, O₂, Ar, H₂, N₂, F5



Machine torch PerCut 451M



Machine torch PerCut 451A



Machine torch PerCut 441

HiFocus 600i neo

Plasma cutting machine for automated cutting with swirl gas – also under water and plasma marking

Technical Data	HiFocus 360i neo + Powermodul HiFocus 600i neo
Cutting current	10 – 360 A + 100-300 A
Marking current	5 – 50 A
Duty cycle	100 %
Plasma gases	Air, O ₂ , Ar, H ₂ , N ₂ , F5
Swirl gases	Air, O ₂ , N ₂
Marking gas	Ar
Cutting range	
• recommended	120 mm
• maximum	160 mm
Piercing	80 mm
Dimensions (L x W x H)	2 x 1030 x 680 x 1450 mm
Weight	517 kg + 510 kg



Components HiFocus 600i neo



Automatic gas console
FlowControl 3-600
Air, O₂, Ar, H₂, N₂, F5



Machine torch PerCut 611 with
quick-change system

HiFocus: Automatic gas console FlowControl

- Consists of the plasma gas controller PGC and the plasma valve unit PGV
- Controls the volume flow and the timing of the single process gases
- 5 separate gas control paths for adjusting and dosing of plasma and swirl gases for optimal, reproducible gas mixtures
- Contains the necessary cutting data for the cutting and marking process for different materials and thicknesses
- Control via databases from CNC control or manually via serial interface
- Can be easily operated on CNC systems without database integration



HiFocus: Automatic Torch Changer ATChanger

- Quick-change unit for automatic swapping of plasma torch heads in combination with 2D and 3D guiding systems
- Can be used as a stationary or a mobile unit
- Operating modes: manual, automatic and loading
- Fitting with up to 8 plasma torch heads with consumables for constant and different cutting tasks
- Basis is the quick-change system of Kjellberg plasma torch PerCut 451A
- Quick change between highest cutting output and finest marking possible
- Reduction in changeover times due to automatic torch head changing
- Applicable for HiFocus 280i neo, HiFocus 360i neo, HiFocus 440i neo – also as retrofit



FineMarker

- Separate unit for marking, notching and punching of mild steel, stainless steel, primered plates and aluminium – also for wet and greasy surfaces
- Control via existing interface of CNC or robot
- Stepless adjustable marking current for optimal process adaptation to the marking job
- Liquid cooled plasma machine torch PB-M25 W

Technical Data	
Marking current	4 – 25 A
Duty cycle	100 %
Marking gas	Ar, Air
Marking speed	1.5 – 12 m/min
Dimensions (L x W x H)	710 x 400 x 440 mm
Weight	30 kg



Voltage depended height control KHC4-PCS



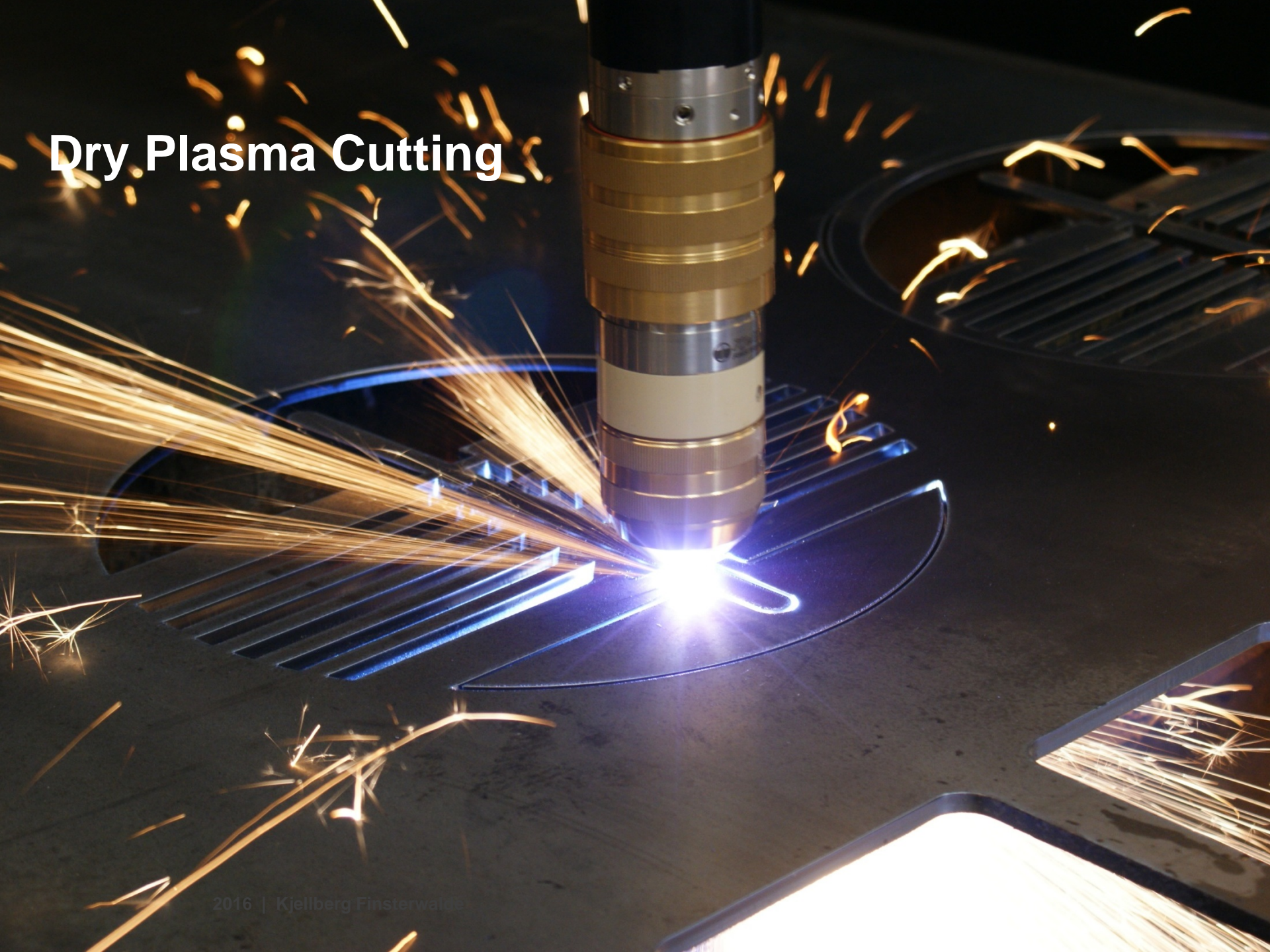
- Height control unit for all high-precision plasma cutting applications
- Tactile finding of initial position on work-piece surface (smooth touching), pressure for initial position finding is adjustable and thus also possible for thin sheets.
- Standard connection with CUTBUS® for CNC control via guiding system or alternatively with Operator Terminal
- Installation or retrofit to any guiding system possible for modernization of existing cutting workstations
- Stroke 220 mm and load max. 12 kg
- For all HiFocus and FineFocus applications

Height control M4000 BAS

- Height control unit for simple plasma applications with CutFire, PA-S45 W, Smart Focus and HiFocus
- Provides all essential functions that are needed for good and constant cutting quality
- Tactile finding of initial position on work-piece surface (smooth touching) or optionally electric initial position finding with contact sensor
- Installation or retrofit to any guiding system possible for modernization of existing cutting workstations
- Stroke 220 mm and load max. 12 kg
- Integrated collision protection

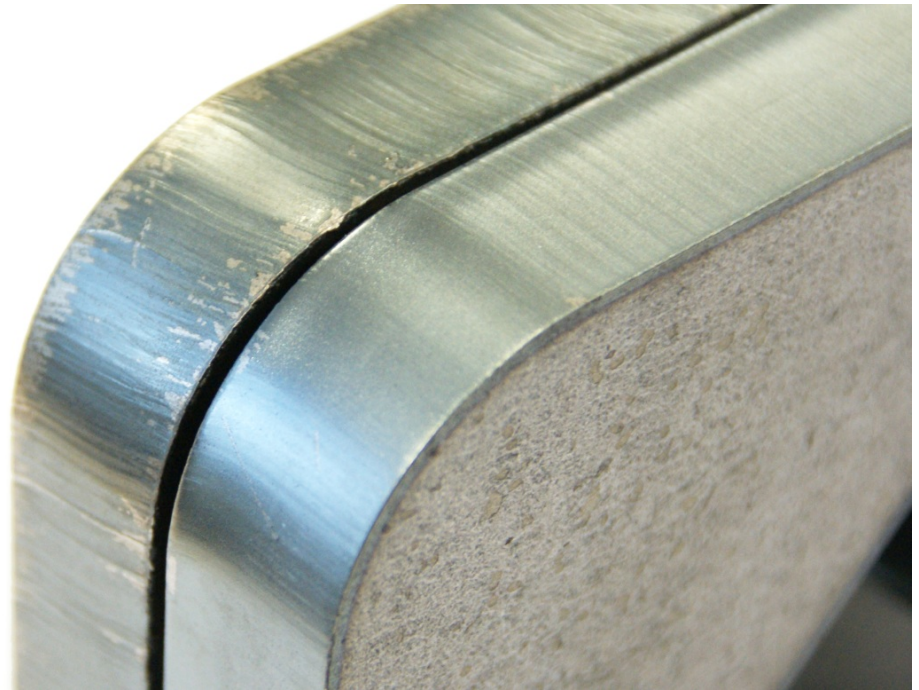


Dry Plasma Cutting



Dry Plasma Cutting

- Standard-Plasma Cutting, common application
- Plasma arc more stable and has less trailing
- For frequent piercing jobs
- Cutting on 2D – guiding systems as well as on robots
- Bevel Cutting for welding seam preparation



Comparison underwater and dry cut 15 mm mild steel

Dry Plasma Cutting

Optimized plasma cutting technologies for precise cutting of mild steel

- **Contour Cut (CC)**
Cutting of small contours, narrow bars and especially small holes with a diameter to thickness ratio 1:1
- **Contour Cut Speed (CCS)**
Cutting contours at similar quality up to 50 % faster and reduce cutting costs per meter



 **contour cut**
SPEED

Dry Plasma Cutting

More efficient plasma cutting:

High cutting Speed, best quality and reduced cutting costs due to long life consumables, optimised technology as well as low gas consumption.

**new – efficient - original
neo makes the Difference!**

The 'neo' logo, where the letters 'n', 'e', and 'o' are in a bold, grey, sans-serif font. The 'n' has a yellow horizontal bar extending to the left, and the 'o' has a yellow horizontal bar extending to the right.

**Best Quality
(Contour Cut)**

+

**High Cutting Speed
(Contour Cut Speed)**

+

**Long Lifetime
(Copper Cathodes)**

=

Low Costs

Underwater Plasma Cutting

A close-up photograph of an underwater plasma cutting process. A dark, cylindrical cutting torch is positioned at the top center, with a bright, intense blue-white plasma arc cutting through a metal workpiece. The surrounding water is turbulent, with numerous bubbles and splashes, indicating the high-speed nature of the process. The lighting is dramatic, with the bright plasma arc illuminating the water and creating a strong contrast with the dark background.

Underwater Plasma Cutting

This application works under the water surface. The protecting influence of the swirl gas and the advantages remain also under water.

- Reduction of noise level, dust and pollution as well as aerosols
- Filtration of the UV radiation through the water
- Reduction of heat influence and deformations
- Rework-free cuts



**Comparison underwater cut and
dry cut 10 mm stainless steel**

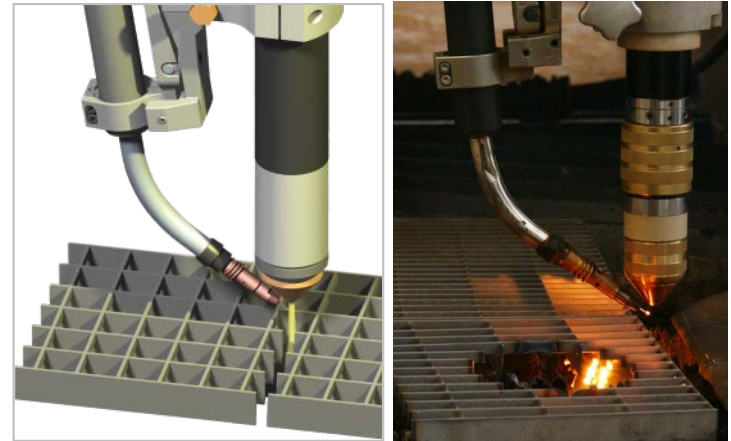
HotWire Plasma Cutting

A close-up photograph of a hot-wire plasma cutting process. A vertical, multi-segmented metal torch is positioned over a metal grate. A bright, intense white and blue plasma arc is visible at the tip of the torch, cutting through the metal. The surrounding area is dimly lit, with some blue and purple light reflecting off the metal surfaces.

HotWire Plasma Cutting

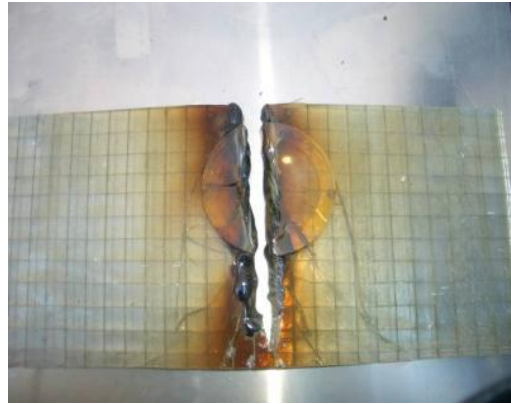
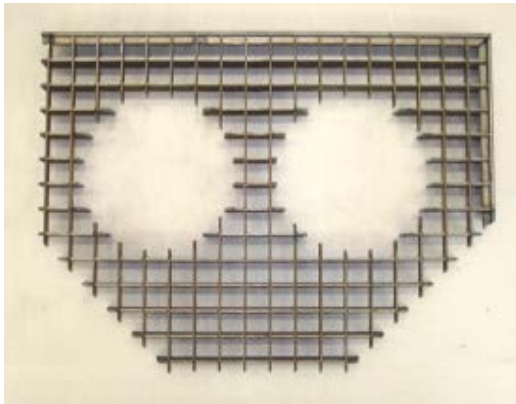
Patented application for cutting of conductive, non conductive, combined and interrupted workpieces

- Based on the indirect plasma cutting process, workpiece isn't part of the electric circle
- One wire, permanently feeded to the cutting process (e.g. welding wire) is used as anode; work piece connection is not necessary
- Suitable power sources: HiFocus 360i neo and FineFocus 800
- The standard applications of the power source are retained in addition to HotWire plasma cutting. The retooling is easily and quickly.



HotWire Plasma Cutting

- gratings made from steel, stainless steel and aluminium
- non-conductive materials made from concrete, reinforced concrete and ceramic
- Composite materials and coated metals
- Tube bundles, hollow profiles, double-walled tubes
- deconstruction of nuclear plants
- Mineral materials in the field of average and disaster control

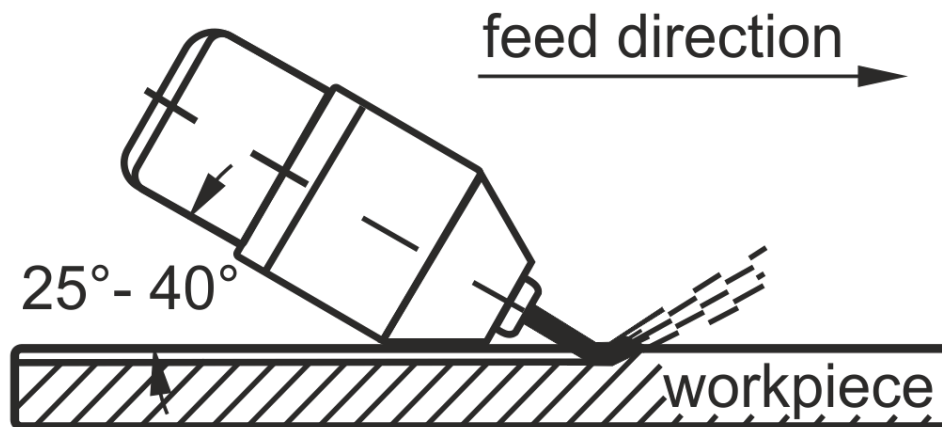


Plasma Gouging



Plasma Gouging

- With a machine torch as well as a hand torch the gouging takes place by transferring the plasma arc directly onto the work piece
- The plasma torch removes the molten material in an effective manner
- All electrically conductive materials, i.e. mild steel, stainless steel, aluminium, high-melting materials or composites



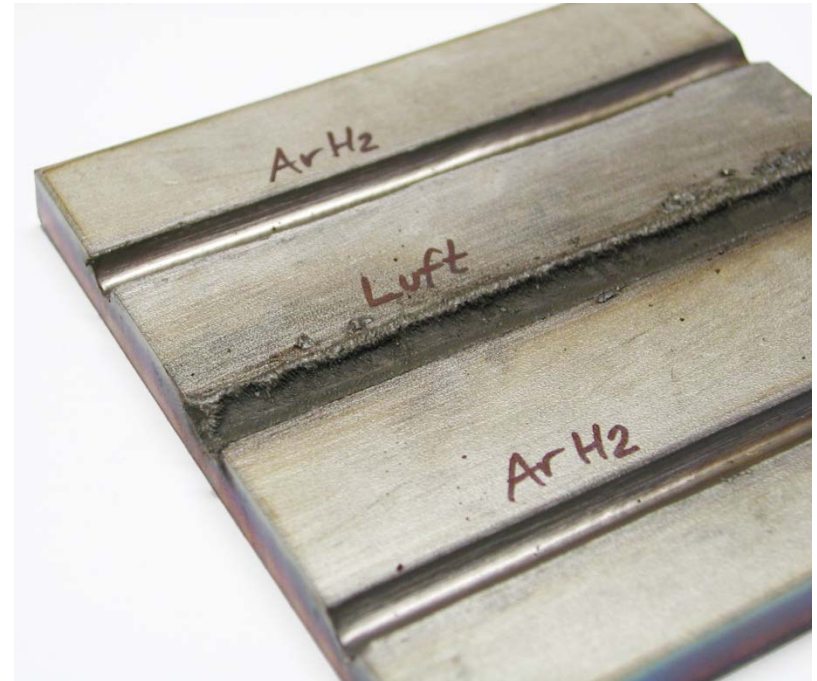
Plasma Gouging

Applications

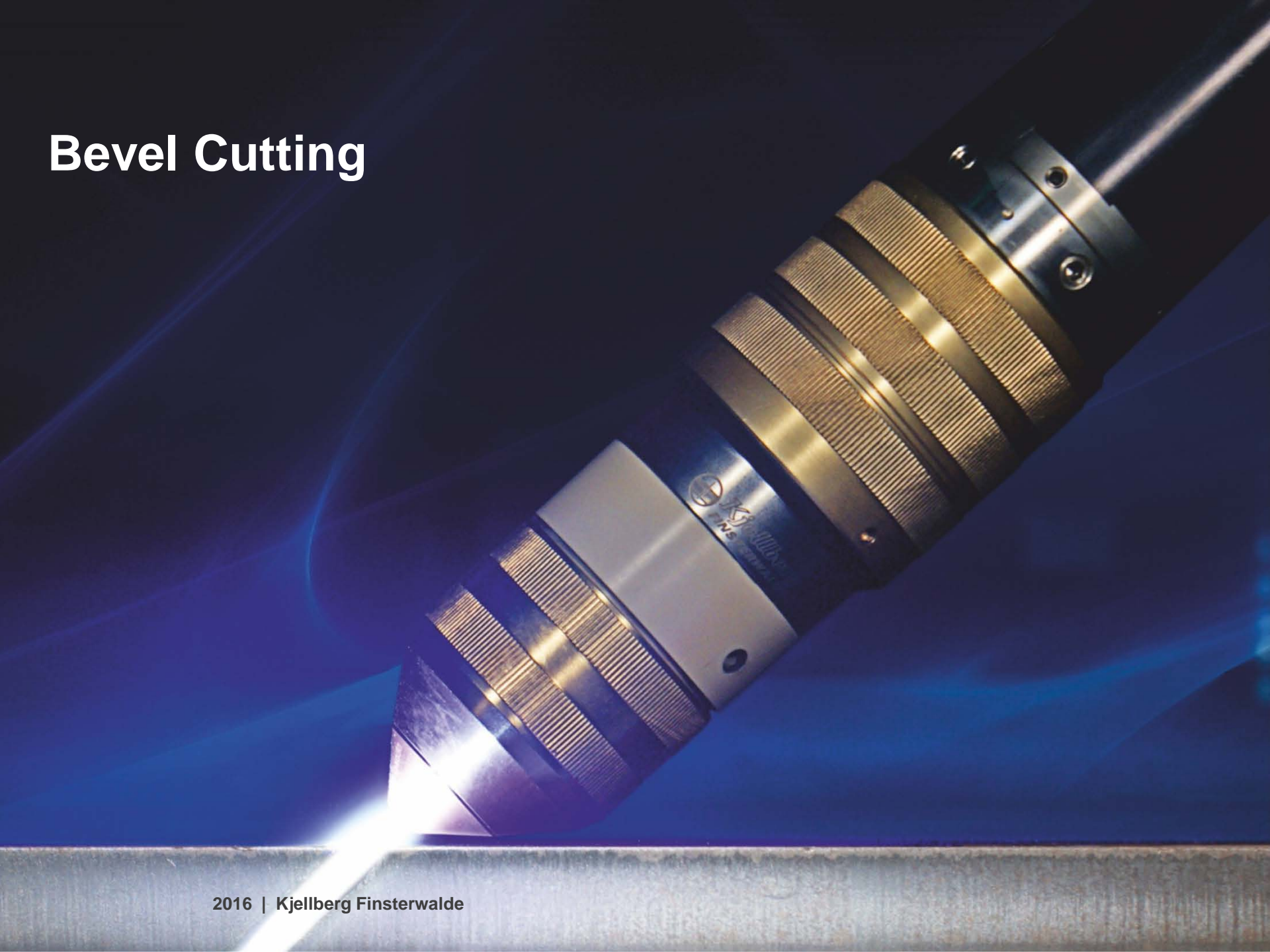
- remove flaws on welds
- prepare back-welding on root welds
- removing surface flaws, i.e. cracks, blowholes or inclusions

Other possible applications

- production of notches
- processing of fusion faces
- cleaning of casted parts
- peeling on surfaces as well as surfaced workpieces and molded parts

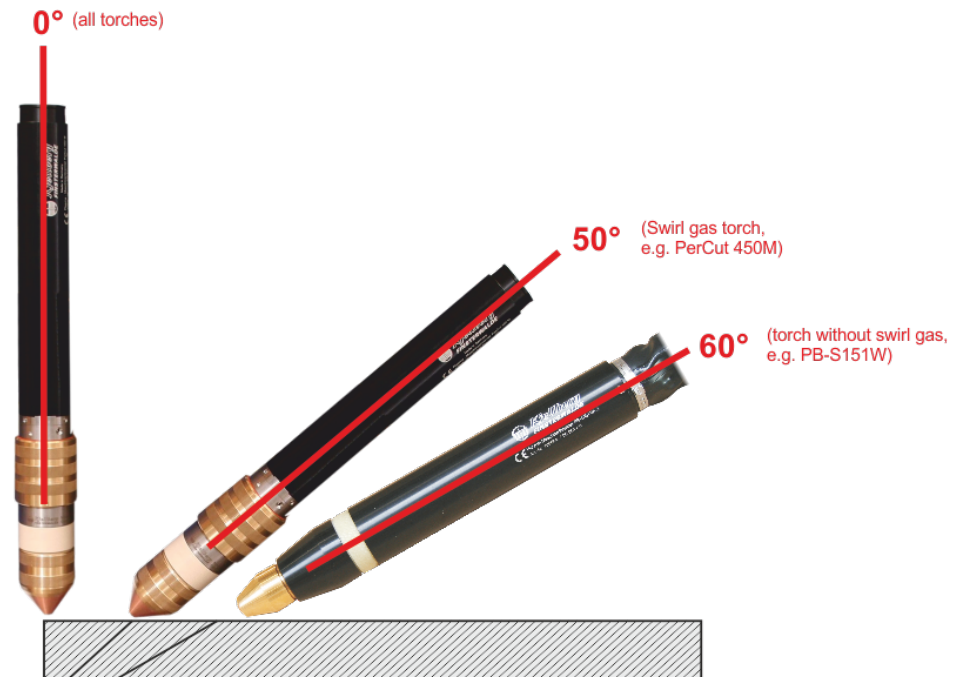


Bevel Cutting



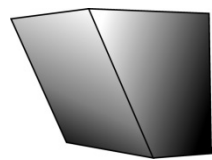
Bevel Cutting

- Bevel cutting primarily used for welding preparation
- The maximum bevel angle is determined by geometry of the torch consumables
- With PerCut 451 all kinds of bevels can be cut up to 50°



Bevel Cutting

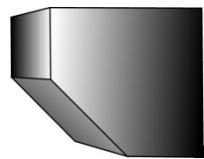
- Various bevel forms possible
- Smooth and constant bevel cuts over the entire thickness range
- Change of bevel angle during the cutting process



VAS



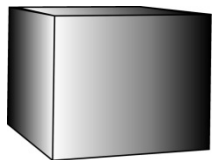
VDS



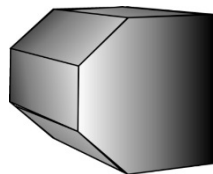
YAS



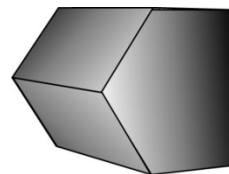
YDS



I



X



K



Plasma Marking



Kjellberg
FINSTERWALD

Marking, Notching and Punching with Plasma

Plasma marking is the marking of electrical conductive materials by plasma arc with variable deepness's and witnesses' of marking lines for further processing. The type of marking depends on the marking current and marking speed.

- Marking: Temporary marking through simple tarnish, not visible after the surface treatment.
- Notching: Permanent marking of materials with penetration by wear out of material, for orientation after surface treatment (e.g. painting or galvanising).
- Punching: Permanent marking of materials with penetration by melting material in one point.

Applications: dimensional markings, mark out for cuts, marking for drilling, center points, labeling