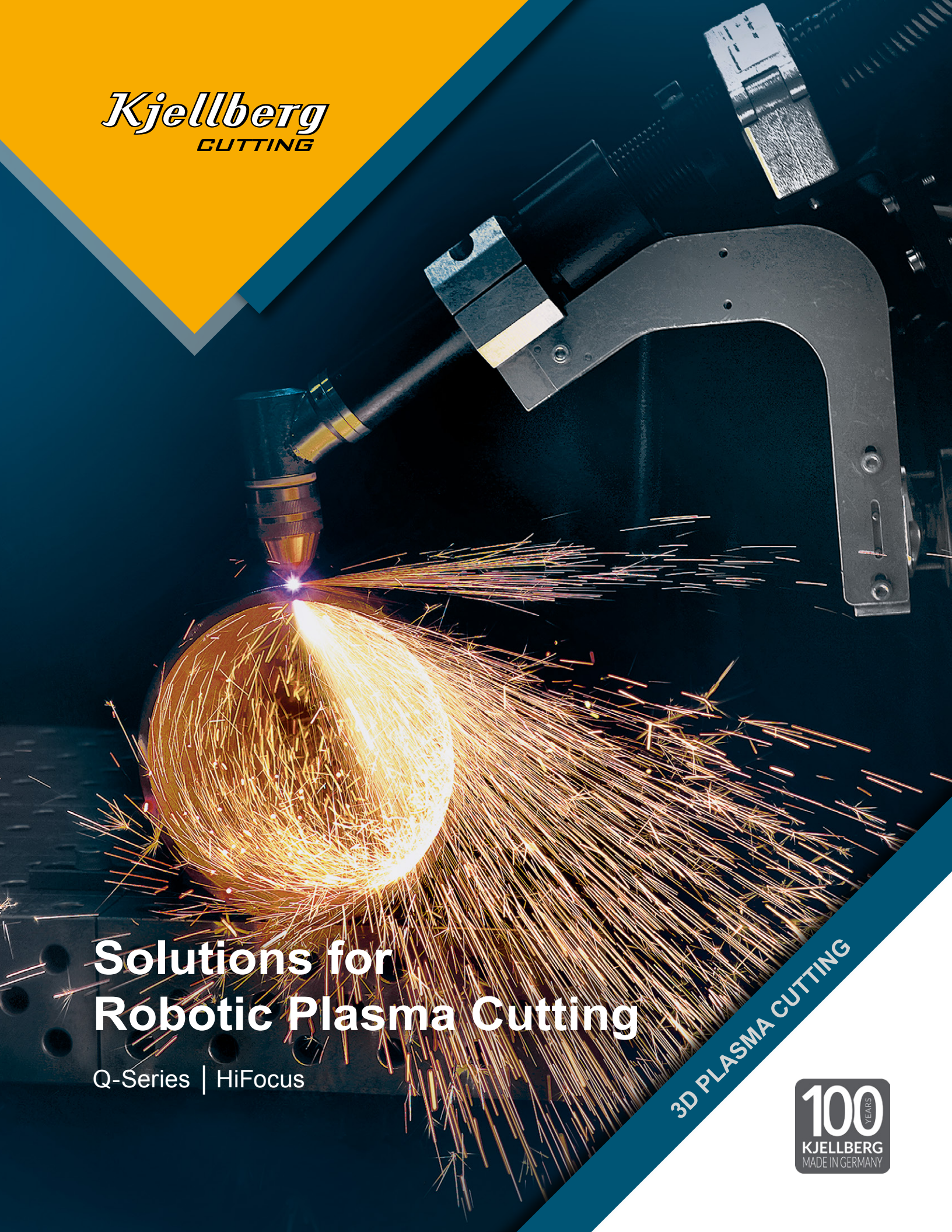
Kjellberg CUTTING



Solutions for Robotic Plasma Cutting

Q-Series | HiFocus

3D PLASMA CUTTING

100 YEARS KJELLBERG MADE IN GERMANY

Industries

Mechanical and Plant Engineering

Tanks, Pressure Vessels, Structural Steel

Pipeline Construction

Automotive and Construction Machinery

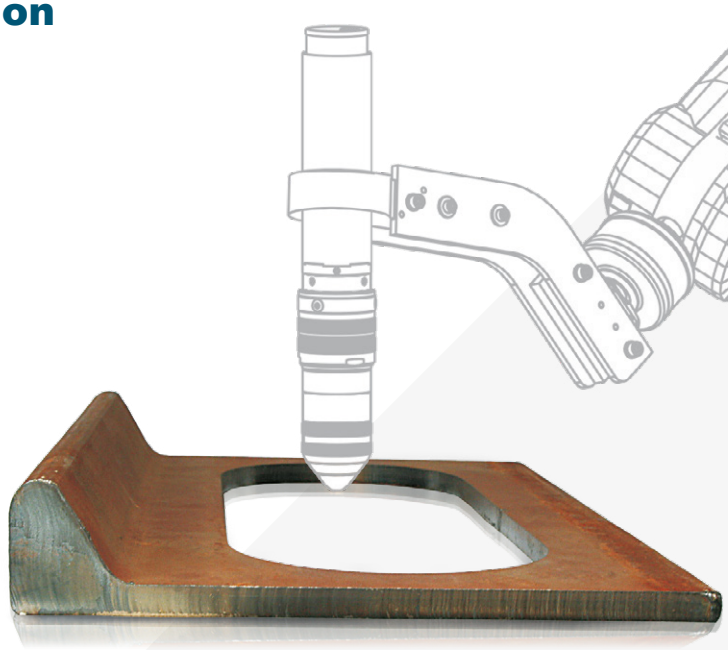
Shipbuilding and Energy Sector

Robotic Plasma Cutting

Robot-guided plasma cutting offers numerous advantages for processing profiles, pipes, containers, dished ends, cast parts and even curved surfaces. Plasma can be used to cut very good holes and slotted holes, bevels for weld seam preparation as well as webs and complex contours and to mark parts. All electrically conductive materials, even complex parts with special shapes, can be cut precisely.

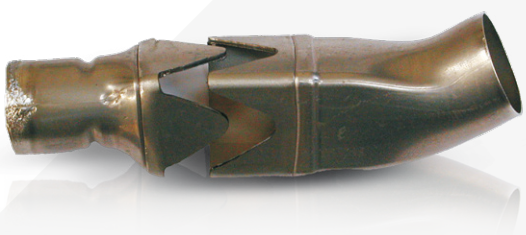
High Flexibility in Application

- ✓ Robot-specific plasma torches
- ✓ Plasma cutting up to 6 1/4 inches
- ✓ Bevel cutting up to 50°
- ✓ Plasma marking
- ✓ Flying start

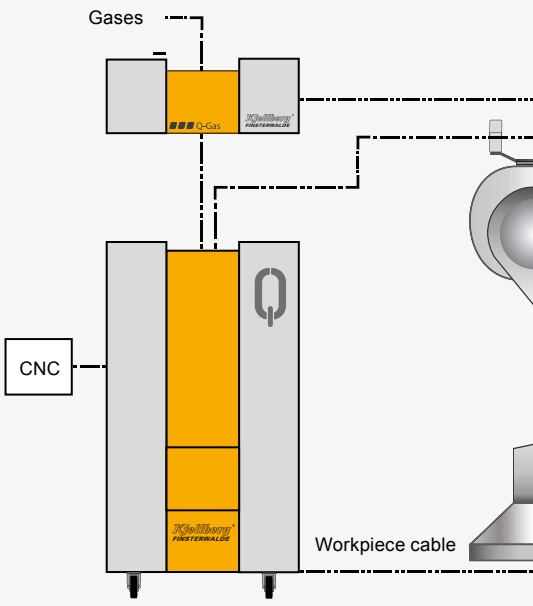


Advantages

- ✓ Results without post-treatment
- ✓ High cutting speed
- ✓ Cost-effective cutting
- ✓ Processing of a wide range of workpieces



Connection diagram of a plasma cutting system with a robot



TUBE CUTTING

Power Sources

Plasma cutting systems from Kjellberg can be used with all commercially available robots and robot controllers.

Integration

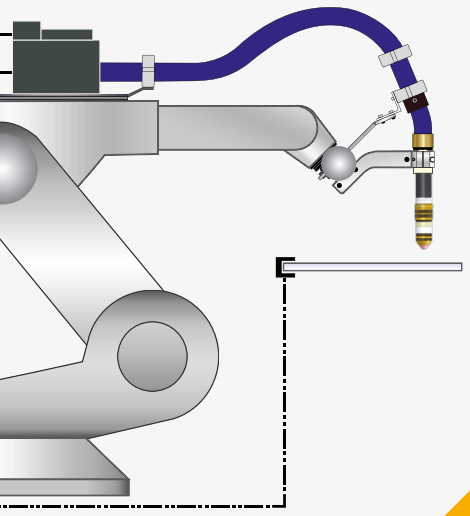
Direct communication between the plasma system and the control system is a precondition for reliable system operation and optimum cutting results. For this purpose, Kjellberg offers a real-time capable BUS connection, but also the option of established serial communication. Process data can also be monitored via Q-Desk our browser based web interface and exported using MQTT for use in OEM reporting software.

Q-Series

Automated plasma cutting systems from the Q-series are optimized for digitized production. The power sources can be controlled via smartphone or tablet and offer high performance when cutting metals up to 4 3/4 inches with 450 A. In order to react flexibly to future requirements, the performance of the plasma cutting systems can be increased afterwards thanks to their modular design.

HiFocus

The flexible high-precision HiFocus system, available in a large range of amperages, offers the right configuration for every application. Depending on the cutting task, automatic or manual gas controls can be used for optimal gas mixing. Plasma torches in different designs for hard-to-reach components are available. Material up to 6 1/4 inches can be cut effectively at highest quality with a cutting current of up to 600 A.



Interfaces

- ✓ EtherCAT
- ✓ RS485
- ✓ MQTT

Teaching

Various teach tips can be used for easy programming of the robot along the desired cutting contour. Used in place of the respective nozzle, they are used to trace the contours on three-dimensional surfaces at a defined distance.

ACCESSORIES

Plasma Torches

Kjellberg offers multiple special torches tailored for robotic cutting. Essential accessories are also available to ensure a reliable cutting operation including plasma torch holders, collision protection and strain relief devices.

Bevel Cutting

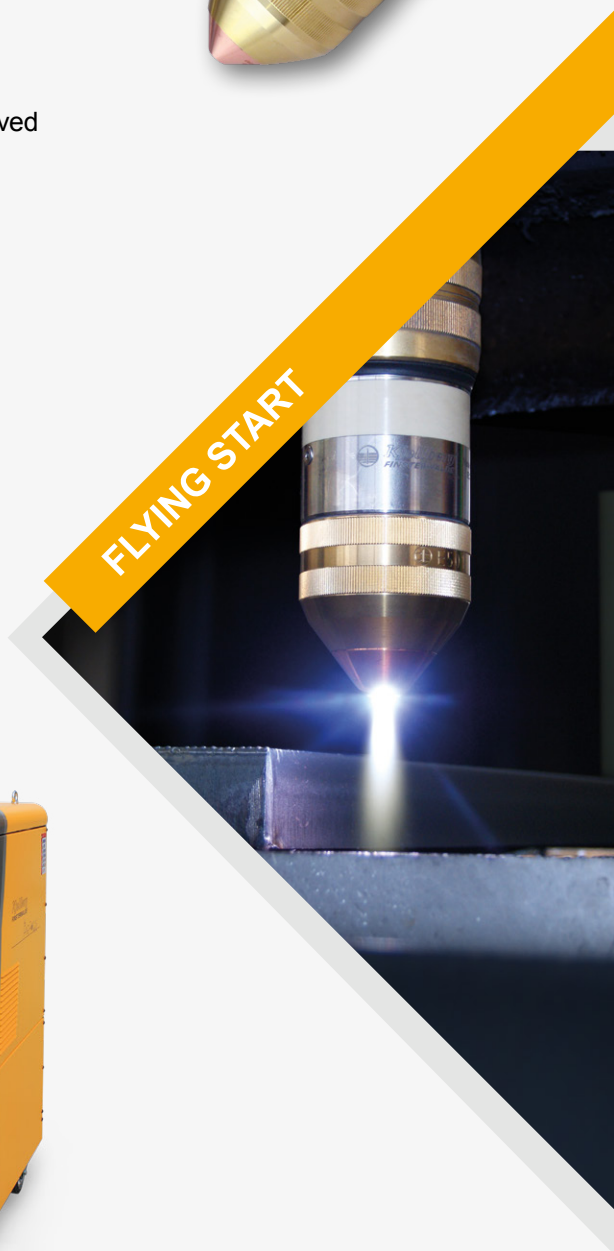
A common and important application in the robotics sector is bevelling for weld seam preparation. Bevel cuts are either cut directly on the contour part or parts are trimmed afterwards.

Plasma Marking

All systems can be used for marking. Dots, lines and other marks can be applied without additional accessories. From fine superficial marking and notching to deeper punching, any result can be achieved by regulating the amperage.

Flying Start

For variable or undefined workpiece positions, for bevelling and trimming sheet metal, it is possible to cut on the fly. In this case, the pilot arc is ignited outside the workpiece without referencing an edge.



Technical data	Q 1500 Q 1500 plus		Q 3000 Q 3000 plus		Q 4500	
Cutting current[1]	150 A		300 A		450 A	
Marking current[1]	5 - 60 A					
Cutting range	Q-Gas O_2	Q-Gas	Q-Gas O_2	Q-Gas	Q-Gas O_2	Q-Gas
Mild steel						
Recommended	0.018 - 1 5/8 in		0.018 - 2 3/8 in		0.018 - 2 3/4 in	
Maximum	2 3/8 in		3 in		4 3/4 in	
Piercing[2]	1 1/4 in		2 in		2 in	
Stainless steel						
Maximum	1 5/8 in	2 3/8 in	2 3/8 in	3 in	2 3/8 in	4 3/4 in
Piercing[2]	1 in	1 1/4 in	1 1/4 in	2 in	1 1/4 in	2 in
Aluminium						
Maximum	1 5/8 in	2 3/8 in	2 3/8 in	3 in	2 3/8 in	4 3/4 in
Piercing[2]	1 in	1 5/8 in	1 5/8 in	2 in	1 5/8 in	2 3/8 in
Plasma gases						
Q-Gas O_2	O_2, N_2, Air					
Q-Gas	O_2, N_2, Air, Ar, H_2, F5[4]					
Swirl gases						
Q-Gas O_2	O_2, N_2, Air					
Q-Gas	O_2, N_2, Air, F5[4]					
Marking gases	Ar, N_2, Air					
Fuse, slow	63 A		125 A		180 A	
Max. connected load	35 kVA		72 kVA		109 kVA	
Mains voltage[3]	380 - 400 V, 50/60 Hz 415 - 440 V, 50/60 Hz 440 - 480 V, 50/60 Hz					

Technical data	HiFocus 280i neo	HiFocus 360i neo	HiFocus 440i neo	HiFocus 600i neo
Cutting current[1]	280 A	360 A	440 A	600 A
Marking current[1]	5 - 50 A			
Cutting range				
Recommended	0.018 - 2 in	0.018 - 2 3/8 in	0.018 - 2 3/8 / 3[5] in	0.018 - 4 3/4 in
Maximum	2 3/4 in	3 in	4 3/4 in	6 1/4 in
Piercing	1 5/8 in	2 in	2 in	3 in
Plasma gases	O_2, Air, Ar, H_2, F5[4]			
Swirl gases				
Marking gases	Ar, N_2, Air			
Fuse, slow	100 A	125 A	200 A	160 A (2x)
Max. connected load	67 kVA	87 kVA	127 kVA	104 + 87 kVA
Mains voltage[3]				

[1] 100% duty cycle, ambient temperature 40 °C
[2] Extension of piercing range possible with ProPierce technology in connection with Q-Gas
[3] Other voltages and frequencies on request
[4] Forming gas F5 (95 % N_2 / 5 % H_2)
[5] Stainless steel

Contact

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Subject to change.