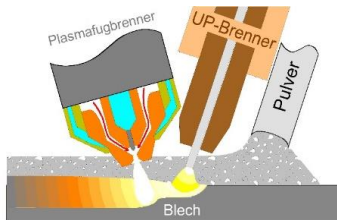
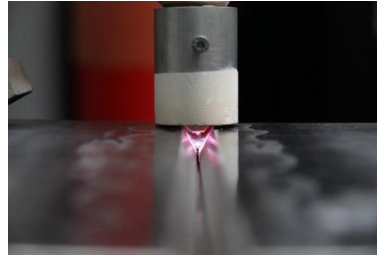


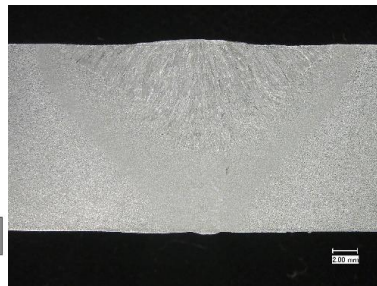
Subject: Extension of the plasma key hole process by an AC hot wire feeding system for highly economical plasma welding of structural steels



Tripod-Sockel für offshore WKA
Quelle: Bittner Group



Schematische Prozessdarstellung
Quelle: HDW Kiel



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Type of thesis:

Bachelorthesis	x	experimental	x
Projectthesis	x	construction	
Masterthesis	x	theoretical	
		literaturerecherche	

Start: Now

Field:

Mechanical engineering / Production technologies

Subject of your thesis:

Plasma welding of structural steel with high welding speeds is often only possible through the use of oxidizing shielding gases and defined joining gaps. The oxidation of alloying elements and changes in gap width can result in a reduction of the weld seam quality. The aim of the thesis is to extend the plasma keyhole process with an additional wire feeding system in order to compensate for the loss of alloying elements, to fill the missing material through the joining gap and to increase the robustness against gap dimension variations.

The additional wire should be pre-heated by ohmic resistance heating using direct or alternating current. It will be investigated to what extent a targeted deflection of the arc through the supplementary wire is possible in order to achieve an improvement of the process stability and the penetration depth.

An existing welding setup can be used, so that the work is mainly focused on understanding the process, determining a suitable parameter window and testing the mechanical-technological properties of the welded joints.

The best thing to do is just drop by and we'll see where your interests are and how we can customize the topic for you.