STEIGERWALD STRAHLTECHNIK

Press information

4 February 2020

EBO Bend: Simply “weld round the corner” with the electron beam.

Please send specimen copy after printing!

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1st question:

“Mr. Wittig, EBO Bend is a technology developed by Steigerwald Strahltechnik which enables us to use the electron beam to weld practically ‘round the corner’. Please explain the principle behind it.”

1. Marco Wittig:

“The EBO Bend process directs the electron beam through a special pipe device at the end of which a deflection unit is installed which ‘bends’ or deflects the beam by 90° using an electromagnetic coil. This enables us to ‘weld round the corner’ in areas which are otherwise not accessible or, for example, to weld pipes on the inside instead of on the outside.”

2nd question:

“Is a special type of system required for this process?”

2. Marco Wittig:

“No, any of our electron beam chamber machines of the EBOCAM series can be equipped with an EBO Bend system – it can even be retrofitted with it. In the process, the system, which has a diameter of only 75 mm, can be extended to any length, depending on the chamber size, and adapted to different welding distances. It is guaranteed to function reliably even at a maximum acceleration voltage of 150 kV.”

3rd question:

“Can the EBO Bend system be adapted to individual customer requirements?”

3. Marco Wittig:

“Yes, because welding tasks are of course different from customer to customer. As already mentioned, the system can be extended variably and adapted to various welding distances. A seam locating system, for example, can also be integrated. This way, by scanning exactly with the electron beam, a seam which is not visible from the outside can be detected directly in the welding position and, thanks to the reliable positioning, the seam can be welded with high precision.”

4th question:

“What are the main areas of application for the EBO Bend process?”

4. Marco Wittig:

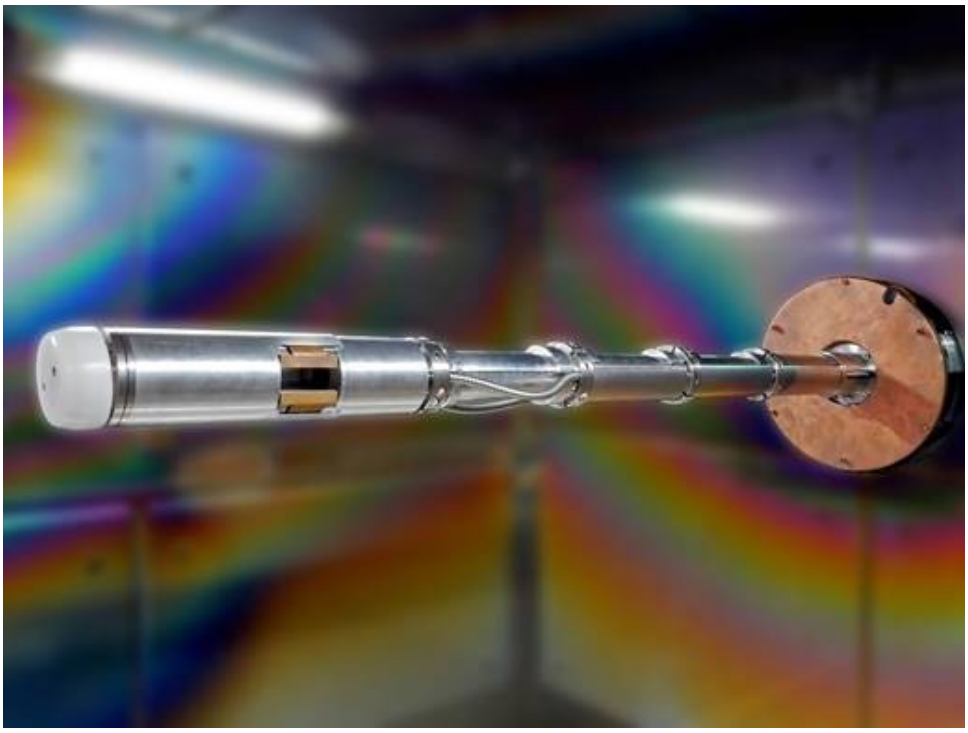
“The areas of application are diverse. Mainly everywhere where a high seam quality is required for welding pipe-flange connections, as is the case, for example, when manufacturing linear accelerators. A Steigerwald chamber machine with EBO Bend system was supplied to CERN, the European organisation for nuclear research, for example, where the world’s largest particle accelerator is used for fundamental physics research on a large scale.”

5.

“Many thanks for the information.”

5. Marco Wittig:

“Don’t mention it, you’re very welcome!”



BU:

Special pipe device which deflects the beam by 90°

BU:

Internally welded particle accelerator (cavity) in basic physics research

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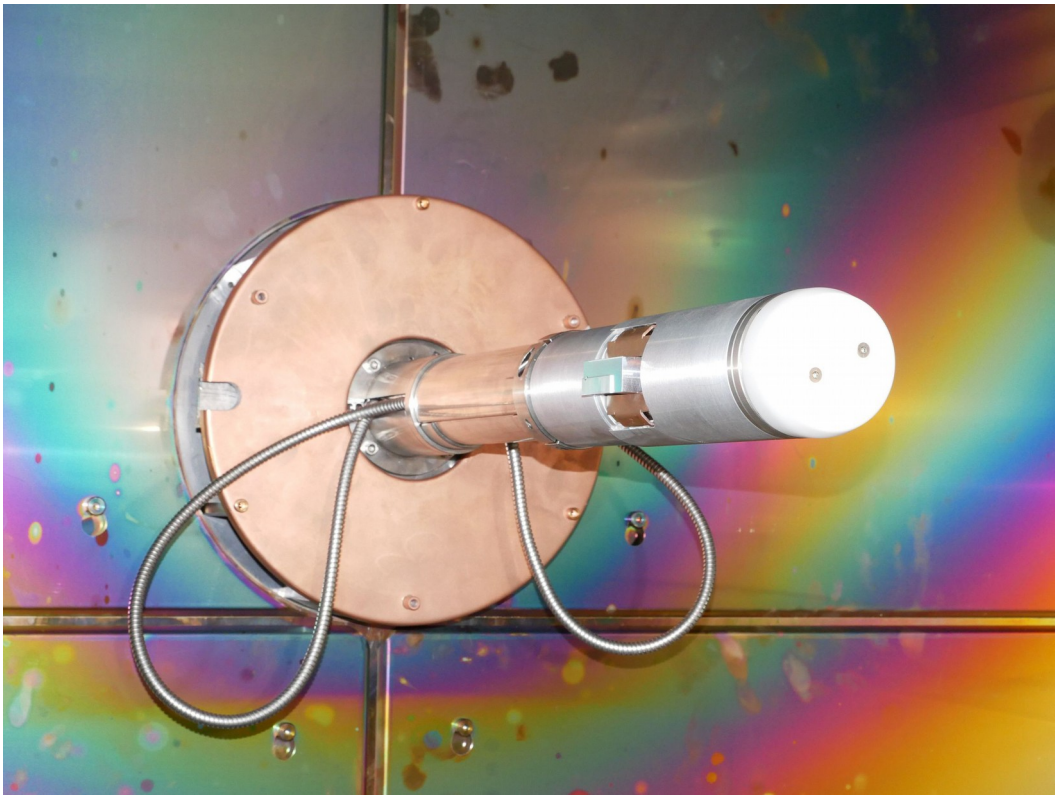
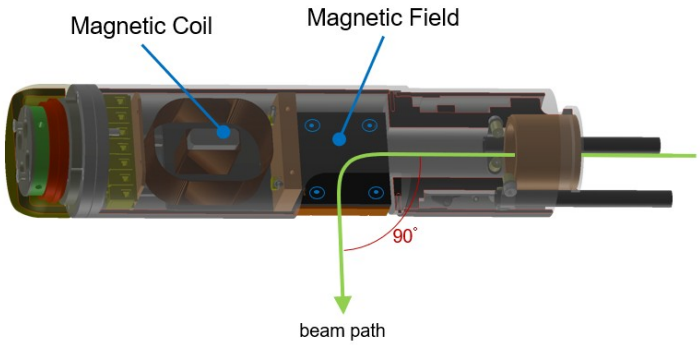


BU:

EBO Bend 90° deflector



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