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- «Автоматичне Зварювання» (Automatic Welding), [https://patonpublishinghouse.com/eng/journals/as](https://patonpublishinghouse.com/eng/journals/as;);
- «Сучасна Електрометалургія» (Electrometallurgy Today), [https://patonpublishinghouse.com/eng/journals/sem](https://patonpublishinghouse.com/eng/journals/sem;);
- «Технічна Діагностика та Неруйнівні Контролі» (Technical Diagnostics & Nondestructive Testing), <https://patonpublishinghouse.com/eng/journals/tdnk>.

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*Translated Article(s) from “Avtomatychne Zvaryuvannya” (Automatic Welding), No. 6, 2024.

**Translated Article(s) from “Suchasna Elektrometalurhiya” (Electrometallurgy Today), No. 4, 2024.





ELECTRON BEAM PRODUCTION OF HARD ALLOY TOOLS

Having combined the expertise of the E.O. Paton Electric Welding Institute and NTUU “Sikorsky Kyiv Polytechnic Institute, the “PlasmaTec” Company founded an R&D Center in 2018. The objective of the Center is creation of competitive innovative developments and technological solutions to provide the industry with fundamentally new production methods. The technological core of the Center is material processing with a high-energy electron beam in electron beam remelting units. The potential and R&D resources of the Center allow conducting a full range of work, including:

- performance of scientific research;
- product design and forecasting their operating life;
- individual development of technologies for hard alloy part production.

R&D Center Mission

Ensure the best quality and the longest service life, compared to similar steel parts.

R&D Center advantages

- technology of a complete cycle of secondary raw material recycling and manufacturing new parts based on WC-Co hard alloys;
- our own research and production laboratory ensuring control of the process of technology development and production at each stage;
- high level specialized expertise in electron beam technologies: welding, heat treatment, sintering, coating.

Parts produced on a regular basis

- hard-alloy rollers for wire winding machines;
- metallurgical guide rollers and scale breakers for wire rolling mills (material WC-Co);
- rollers with WC-Co carbide inserts for wire drawing mills.



D — 31 mm
 d — 22 mm
 H — 14 mm



D — 26 mm
 d — 18 mm
 H — 20 mm



D — 56 mm
 d — 28 mm
 H — 45 mm



D — 82 mm
 d — 62 mm
 H — 24.5 mm

We develop all the solutions individually in accordance with the customer requirements

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