MAKING CERAMIC-METAL PRODUCTS BY EXPLOSIVE PRESSING

Description
A technology of making ceramic-metal products by explosive pressing has been developed. The method consists of treating ceramic-metal powders in special containers using explosives charges. After the explosive treatment, the containers become integral parts of the products.

![Billet for an insulating unit.](image)

Technical appraisal and economic benefits
Insulating units manufactured by explosive pressing and used in commercial products operate under loads of several tons at a temperature of up to 700°C and withstand a breakdown voltage of 2,000 V. The service life of such units under the indicated conditions is about 8 years, which is about ten times longer than the service life of the traditional insulation. The parts and units produced by explosive pressing can operate in an atmosphere containing sulfur dioxide and metallic dust, do not require repair and maintenance, and improves the reliability of the insulating equipment.

Application areas
Ceramic-metal products are intended for use as insulating units in smelting furnaces, as sealing elements of gas turbine jets, etc.

Development stage
Metal ceramics have been used in the commercial production of articles at a plant in Novosibirsk for more than ten years.

Patent situation
Know-how is available.
Commercial offers
Contract for the development of ceramic-metal explosive technologies;
production and supply contract;
contract for the production and supply of equipment for explosive pressing technologies at the
customer’s location.

Estimated Cost
Price is to be negotiated.

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