

## Characteristics of a powerful AC plasma torch when operating on carbon dioxide

S. G. Rebrov, A. N. Golikov and I. A. Fedorov

The State Scientific Centre Keldysh Research Center  
8 Onegskayast., Moscow, 125438, Russia  
E-mail: rebrov\_sergey@mail.ru

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*The paper presents the results of a study of the features of the operation of a three-phase alternating current plasma torch of megawatt power when using carbon dioxide as a working medium. Data were obtained on the current-voltage characteristic of the plasma torch, as well as on the rate of entrainment of the most heat-stressed nodes: electrodes and confusers. The data on entrainment were obtained by weighing the studied nodes after their operation cycles. The operating modes of the plasma torch varied in the range: arc power: 0.92–1.2 MW, current: 345–400 A, carbon dioxide consumption ~110 g/s. The rate of entrainment of electrodes and confusers during operation of the plasma torch on CO<sub>2</sub> and air is compared.*

**Keywords:** AC plasma torch, three-phase plasma torch, electric arc, resource, electrodes, erosion, reforming.

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