The faced layer is easily machined by any method, including turning, drilling, milling, grinding, etc. The thickness of the faced layer after machining is 4-5 mm and its hardness Rockwell C 30-32, which is very important for increasing the service life of the parts.

Production tests of the faced parts made in the 'Plastpolimer' Okhtinsk Scientific-Production Association (Leningrad) showed the high corrosion resistance of the faced layer, while the cost of producing the parts dropped to an average of half. The saving from replacing parts of expensive KhN77YuR alloy with parts faced with MnMts 60-20-20 alloy was 5000 rubles for a single extruder.

LITERATURE CITED


THE DEVELOPMENT AND INTRODUCTION OF A NEW METHOD OF ASSEMBLING AND WELDING DISCHARGE ELECTRODES

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In connection with strengthening the struggle for preserving the environment it has been necessary to sharply increase the production of gas-cleaning equipment and to increase its quality. In the Semibratovo Experimental Gas-Cleaning Equipment Plant in order to provide an increase in production it was necessary to do a combination of work on the creation of modern technology and highly productive production equipment.

Previously in the plant one of the laborious operations in production of discharge electrodes was assembly and welding, which was done manually without the use of jigs and manipulators.

In the development of a new method and special equipment providing highly mechanized and quality production of discharge electrodes, an analysis of the existing design of discharge electrodes was made for the purpose of improving their producibility. According to the design, the discharge elements were fastened to a center tube with the use of half collars.
which, in turn, were connected to each other with bolts (Fig. 1). After assembly the nuts were tack-welded to the bolts to eliminate their becoming loose under the action of vibrations and the discharge elements to the tube to prevent their slippage. With such a design of discharge electrodes, mechanization of their assembly was difficult and a large number of fastening parts was required.

An analysis of the operating conditions of discharge electrodes showed that it was possible to eliminate bolt connections without loss of effectiveness of the design. Several variations of fastening the discharge elements to the tube and welding methods were considered. The most applicable was a method of welding by arc spot welding. The use of highly productive welding by arc spot welding made it possible to increase labor productivity, speed up the operation of producing the discharge electrodes, and use simple production equipment.

To replace bolt connections with arc spot welding required a change in the shape of the discharge element (Fig. 2). A die was designed and built for flattening the bent ends of the discharge elements and simultaneously bending them.

In developing a welding method by arc spot welding of the lock connection of the discharge elements with the frame, the influence of the welding parameters on weld-joint quality, which was evaluated by the strength and external appearance of the weld joint, was studied. The average failure load in static tensile testing of the weld joint was used as the index of strength. The external appearance of the joint was assumed to be satisfactory if there were no undercuts or burns on the elements. The gap between the elements must be no more than 1 mm. A small amount of reinforcement of the joint in accordance with All-Union State Standard 14776-69 was allowed.

The experimental work was done on special laboratory equipment. The arc spot-welded joint of the discharge element was made by arc welding in carbon dioxide by arc spot welding using an A-547 semiautomatic machine. For the semiautomatic machine to be used for arc spot welding a time relay was connected to its circuit. The semiautomatic machine was equipped with a nozzle with a shoulder.

On the basis of the results of experimental work the following welding parameters were chosen for arc spot welding of the joint: current 150-200 A, arc voltage 24-27 V, welding time 2.5-3 sec, throat depth of the electrode 10 mm, wire diameter 1.2 mm.

Test samples of the discharge electrodes were tested on a dynamic stand. There was no failure of the arc spot welds.

In analyzing the design of the discharge electrodes it was decided to divide their assembly and welding into three operations: assembly and welding of the units included in the frame and tube with the strips, pins, and hooks; assembly and welding of the frame; and impregnation of the discharge electrode frame by the discharge elements.

![Fig. 1. Fastening of the discharge elements with bolts.](image)

![Fig. 2. Design of the discharge element for welding by arc spot welding.](image)