

The proposed arc plasmatron can be used in equipment for plasma treatment and cutting of metals. The plasmatron differs in that the plasmatron casing cavity designed for cooling the plasmatron copper electrode is divided into two sections by a partition made of insulating material and having holes for passing cooling water, and that a turbulizer for cooling water is created by the inside surface of the plasmatron nozzle, radial slots, the outside surface of the nozzle, and a cone-shaped extension in the plasmatron casing. The said features of the plasmatron design provide the effective water and air cooling of the inside and outside surfaces of the plasmatron. The regulation of the temperature of the inside surface of the plasmatron, cooling of the outside surface of the nozzle, and protection of the nozzle against melted metal particles improve the operational reliability of the plasmatron.