

Title (en)

Modular segmented cathode plasma generator.

Title (de)

Plasmagenerator mit modular geteilter Kathode.

Title (fr)

Générateur de plasma à cathode segmentée modulairement.

Publication

EP 0351847 A2 19900124 (EN)

Application

EP 89113342 A 19890720

Priority

US 22250788 A 19880721

Abstract (en)

A supersonic plasma system in which a vacuum source creates a low static pressure environment within an enclosure containing a plasma gun (16) and a workpiece (24) has plural cathodes (84, 86, 88) of sealed, modular construction in conjunction with a common anode, to provide higher levels of operating power and other advantages which flow from a segmented cathode gun configuration. Inert gas independently introduced into the plural cathodes (84, 86, 88) undergoes swirling motion over the cathode tips. The anode is of modular construction for easy replacement in order to change the configuration of a nozzle, a plurality of arc chambers receiving the plural cathodes or a central mixing chamber between the nozzle and the arc chambers within the anode and coupled to a central powder feed (72). The powder feed includes a replaceable insert which includes at least one and preferably a plurality of powder feed ports into the various arc chambers. Alternatively, metal which has already been heated to a molten state can be fed directly into the central mixing chamber. The modular cathodes which are independently powered by separate D.C. power sources (99A, 99B, 99C) are also independently cooled by separate cooling water systems as is the common anode. The cooling systems are configured to produce swirling of the cooling water so that cooling action is maximized.

IPC 1-7

B05B 7/22; **C23C 4/12**; **H05H 1/34**; **H05H 1/42**; **H05H 1/44**

IPC 8 full level

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CPC (source: EP)

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Cited by

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