

ABSTRACT

The present invention relates to a combined processing head for a laser-jet liquid beam self-generated abrasive flow and a working method. The combined processing head for a laser-jet liquid beam self-generated abrasive flow includes: a jetting mechanism including a connection portion, where the connection portion is provided with a passage in communication with a nozzle and an inner space of a lens cylinder, one end of the connection portion is connected to the lens cylinder, the other end of the connection portion is connected to the nozzle and extends into an inside of the nozzle, the part of the connection portion extending into the inside of the nozzle is provided with a flange in close contact with a side wall of the nozzle and forms an annular cavity with the side wall of the nozzle, the flange is provided with a plurality of through holes, the through holes are in communication with the annular cavity and an inner space of the nozzle, the position of the side wall of the nozzle at which the annular cavity is located is provided with a liquid injection port configured to inject a saturated salt solution at a set pressure into the annular cavity; and a cooling mechanism including a cooling cylinder having openings at two ends, where an inside of the cooling cylinder is provided with a cooling tube configured to cool the saturated salt solution ejected from the nozzle and flowing through the cooling cylinder, to enable fine crystalline grains to be precipitated from the saturated salt solution. The combined processing head of the present invention can effectively improve processing quality of a workpiece.

Fig. 1