

METHOD AND APPARATUS FOR METALWORKING USING A COOLANT FLUID

ABSTRACT

A metal machining apparatus for removal of metal from a workpiece (6), that employs a laser-targeted coolant nozzle (20) to apply coolant fluid to a machining tool (2), such as a grinding wheel, to remove metal from the workpiece. The laser-targeted coolant nozzle (20) has a coolant nozzle body having a flow passage (27) for the coolant fluid, and a laser bore (22). The laser bore (22) forms an access opening in the outer surface of the nozzle body in through which a visible laser (40) can be inserted. The laser bore (22) provides a line of sight with the flow passage outlet (29). The visible laser (40) can be inserted into the laser bore (22), and is configured so that the visible laser beam (23) cooperates with a positioning feature (25) on the nozzle body for visually positioning the coolant nozzle (20) relative to the grinding wheel (2). When the laser (40) is removed and replaced with a seal plug, the stream of coolant fluid passing through the flow passage (27) can be directed accurately at the grinding wheel (2) for improved workpiece grinding.

FIG. 1