

A PORTABLE MANUAL POLISHING MACHINE FOR GEMSTONE MINERS

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ABSTRACT

Our portable manual polishing machine is driven by pedaling action where motion and power is transmitted to a bevel gear which in turn rotates a horizontal polishing lap. This gearing system enables us to put less effort for peddling. For a very low input effort, you can get maximum output distance covered by a rubber strand connected between the larger driver wheel and the smaller driven wheel. A shaft connected to the driven wheel through a ball bearing then rotates the first component of the bevel gear vertically. The second member of the gear is then made to rotate horizontally which in turn rotates the machine's cutting surface. The machine also utilizes this manual driven power to pump the coolant to the polishing wheel surface. This wheel has been made removable for replacement when it wears out.

The machine is made portable as it has a wheel attached at the base frame. By simply tilting it, the machine can be pushed through all terrain. A provision has also been made to make it possible to screw the machine on a bicycle for transporting it as well as carrying out machining operations without detaching it.

Comparing our machine to the manufacturer's automatic one, this machine is simple to design, easy to understand and operate, less costly, operated manually, light in weight and is mobile.



Figure 1: Showing raw gemstone before Polishing and after they are polished. The beaded one and the one used as jewelry.