

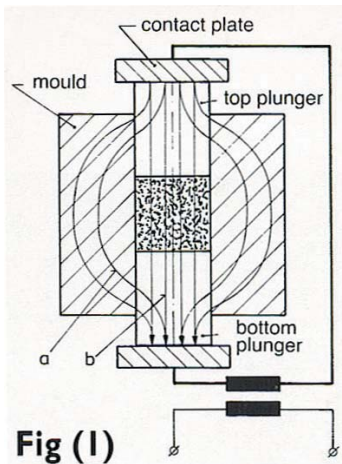
# MECHANICAL CARBON

carbon & graphite for pressure sintering

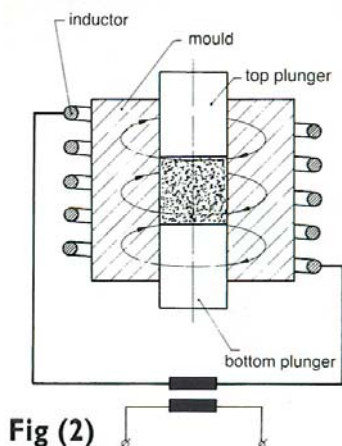


Pressure sintering is the term used for the manufacture of hard metals, ceramics and diamond tools. Morgan Industrial Carbon's main application is for diamond tools such as saw blades used for cutting reinforced concrete or core drills used to drill holes into concrete.

For the diamond tool segments composite moulds are made consisting of top and bottom plungers, spacers, side and end plates. All of these parts are made from isostatically pressed dense graphite, of several different grades. These are selected to suit the heating methods of the mould.



As the term pressure sintering suggests, the sintering process takes place at pressure and heat is applied to the article being manufactured. One method of heating is resistance heating (fig 1) – this is by passing an electrical current directly through the mould. The other is by induction heating where the inductor is a coil surrounding the graphite mould (fig 2).



The demands on graphite are severe, high pressure is applied to the plungers, and at the same time is subjected to high temperatures, often in oxidising atmospheres. High oxidation wear rate often results from an unfavourable choice of materials. In general we recommend working in an inert atmosphere where temperatures exceeding 500°C, although this can give rise to handling problems and lengthy production cycles.

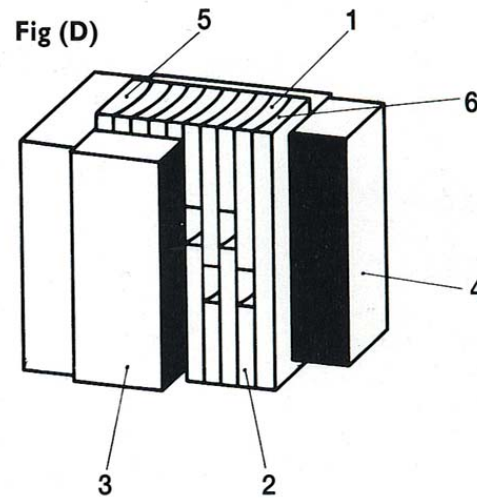
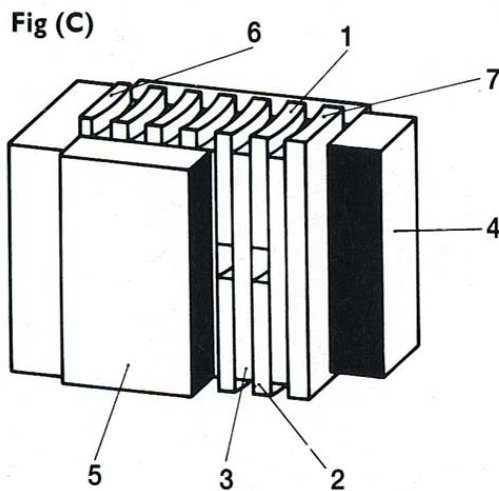
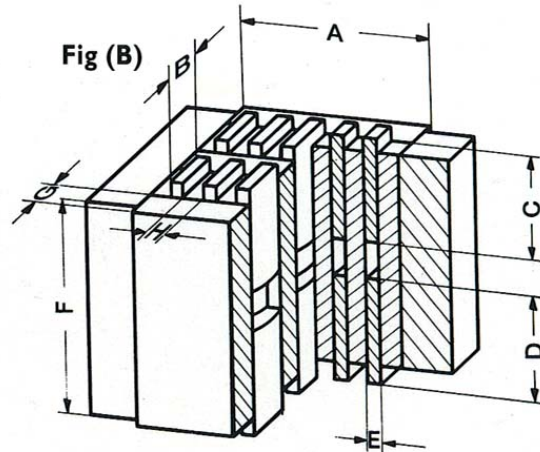
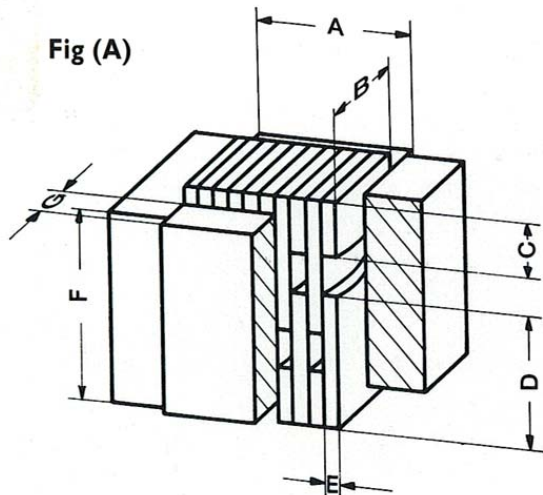
Information on various grades can be obtained from Morgan Industrial Carbon when ordering.



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## Multiple Moulds for the Manufacture of Segments for Cutting discs



- 1 – top plunger
- 2 – bottom plunger
- 3 – spacer plate
- 4 – end plate
- 5 – side plate
- 6 – spacer plate/convex
- 7 – spacer plate/concave

- 1 – top plunger
- 2 – bottom plunger
- 3 – side plate
- 4 – end plate
- 5 – spacer plate/convex
- 6 – spacer plate/concave

