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(54) Title: MAGNESIUM PRESSURE CASTING**(57) Abstract**

The provision or use, for the pressure casting of magnesium alloy in a molten or thixotropic state with a pressure casting machine having a mould or die which defines a die cavity, of a metal flow system which includes a die or mould tool means which defines at least one runner from which molten magnesium alloy is able to be injected into the die cavity. The metal flow system is of a form providing for control of metal flow velocities within the flow system, whereby substantially all of the metal flowing throughout the die cavity is in a viscous or semi-solid state. Filling of the die cavity is able to proceed progressively by semi-solid fronts of metal moving away from a gate or other site of injection. The flow of magnesium alloy from the runner may be via at least one controlled expansion region of the metal flow system in which region the metal flow is able to spread laterally, with respect to its direction of injection, with a resultant reduction in its flow velocity relative to its velocity in the runner.

