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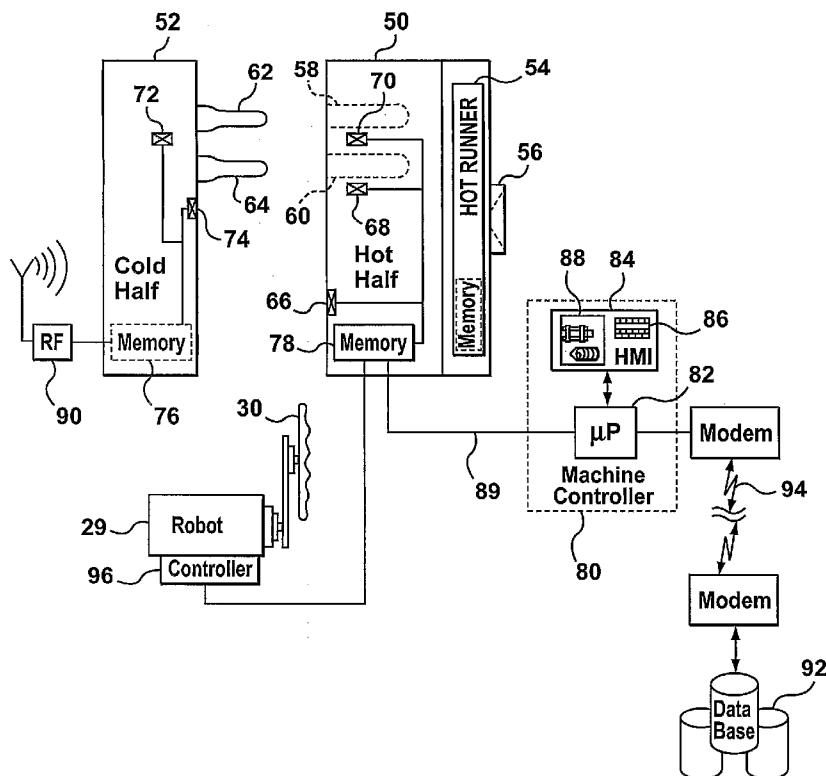
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(54) Title: INTELLIGENT MOLDING ENVIRONMENT AND METHOD OF CONTROLLING APPLIED CLAMP TONNAGE



(57) Abstract: Rather than developing full closure tonnage for a substantial portion of the duration of an injection cycle, closed loop control of the clamp pressure (such as through control of hydraulic pistons) permits clamp pressure to balance exactly, but preferably slightly exceed, the instantaneous injection pressure. A first approach mimics the injection pressure profile with time, whereby applied tonnage is varied with time according to sensed pressure measurements. A second approach looks to pre-stored or historically accumulated injection pressure information and, instead of varying the tonnage, applies a constant tonnage reflecting the maximum recorded or most likely injection pressure to be experienced in the mold (as recorded stored in a look-up table associated with the particular mold configuration). A machine controller (80, 82) causes the application of applied tonnage through the platen (16, 17) and tie-bars (19, 20) of an injection molding machine (10). Pressure sensors (66-74) located either on a mold surface (50), relative to stack components (58-64) and/or relative to a force closure path of permit a microprocessor (82) to control applied clamp closure tonnage. In this way, the system consumes less power and component wear is reduced.



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