

Case	Application: Delta Industrial Automation Products for Die Casting Machines				
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Applicable to	VFD-VJ series Hybrid Servo Drive, Servo Motor				
Key words	hot chamber die casting machine, cold chamber die casting machine				

[\[Introduction to Pressure Casting\]](#)

The fundamental process of die casting is to first melt the elements aluminum, magnesium, copper and zinc, and then inject the hot liquid into a metal mold with high speed and high pressure, and last, solidify the molten liquid with instant cooling. Among all casting methods, die casting is the most efficient and time-saving.

Casting is also widely used in the machinery and industrial automation industry because of its many excellent features including high productivity, high efficiency, good product quality, dimension accuracy, clear product profile, thin-wall casting, and more.

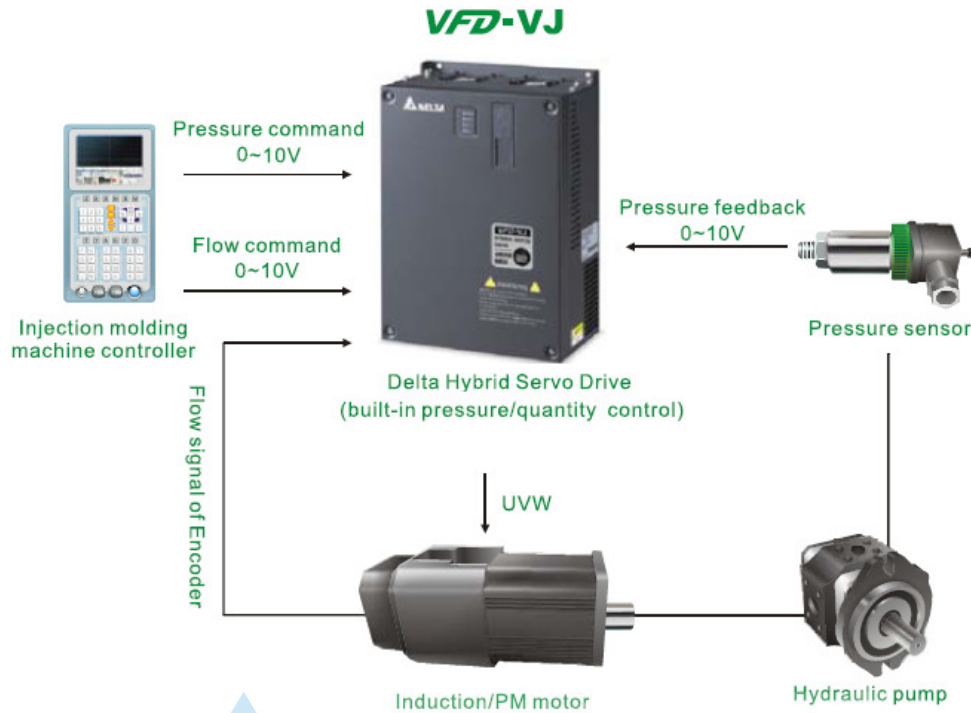
Die casting machines can be divided into two categories: hot chamber die casting machines and cold chamber die casting machines. In a hot chamber die casting machine, the pressing chamber is located in the crucible which is surrounded by molten metal; the injection part is not connected at the bottom of the machine, but is installed on the top of the crucible. In a cold chamber die casting machine, the pressing chamber and crucible are two separate sections; the molten metal is drawn from the crucible to the pressing chamber for solidification.

[\[Application\]](#)

The injection process in casting has three separate stages: low speed, high speed and pressure increase. The pressure and flow required at each stage are different. A traditional die casting machine is more energy consuming because it uses an induction motor to perform mold close, injection, and mold open.

Delta offers you a new solution: a hybrid servo system with the VFD-VJ series hybrid servo drive. As soon as the host controller sends pressure and flow commands to the hybrid servo drive, the drive begins PID configuration by using actual pressure and rpm feedback to configure the optimal amount of pressure and flow and activate the servo motor and hydraulic pump. Delta's new solution results in a quick response and high repeating accuracy.

【System Structure】



【Conclusion】

In recent years, with the depletion of the Earth's resources, environmental issues have become a major concern, and energy-saving products have become more popular. In line with Delta's mission "to provide innovative, clean and efficient energy solutions for a better tomorrow" we invented our servo control system in 2009. Our ultimate goal is to reduce power consumption to minimize environmental impact, and we have even devoted manpower and technology to refurbishing old machines. After years of experience in energy-saving product innovation, Delta continues to receive excellent feedback, while we strive to build a good name in the market.

For more information on the VFD-VJ series AC motor drive, please visit our website at:

http://www.delta.com.tw/ch/product/em/drive/ac_motor/ac_motor_product.asp?pid=1&cid=1&itid=12

With solid experience and advanced technology, Delta Industrial Automation offers efficient and reliable solutions and service – we are your most trustworthy partner.

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