SERVOCONTROLS

Customer: OEM's Under NDA

Machine Capacity: 100T, 125T, 200T, 400T, 500T, 800T Position control accuracy: 0.005 mm Pressure control accuracy: +/-1 Bar



Modern Industry is looking for flexible solutions that will be able to provide some new characteristics of hydraulic systems, such as the ability of control motion, the possibility for continuous control of the required values, simple data transfer and signal processing, the possibility of monitoring and process visualization etc. Modern Hydraulic systems have evolved towards electronics and microprocessor controlled electrohydraulic components in order to achieve new control possibilities. Due to its complexity almost every advance controller must be implemented on a digital computer. Such control systems that have electrically actuated valves can respond to the complex demands posed by today's technology.

APPLICATION NOTE

MOTION CONTROLLER IN HYDRAULIC PRESS

Presses are one of the most commonly used machine tool in industry for the forming of different materials. In the past, for the pressing tasks mechanical presses where more frequently used, but nowadays hydraulic presses take precedence due to their numerous advantages such as:

- full force through the stoke.
- Moving parts that operate with good lubrication,
- Force that can be fully adjustable, which contributes to the flexibility of application,
- Safety features that can be programmed and incorporated into the control algorithms
- Can be made for very large force capacities.

On the other hand, hydraulic presses are generally slower than mechanical presses. However, this disadvantage is being overcome with the development of new valves with higher flow capacities, smaller response times and improved control capabilities. In these kind of applications, the ability of force control systems to follow-up varying reference signals is often required for the proper operation of the technological process. In addition, the task of the position control of the hydraulic actuator is also very important. Therefore, a new quality and significant improvement in the functioning of the press can be obtained with simultaneous realization of position feedback, which is actually a hybrid algorithm. The hybrid Position/Force algorithm control allows the position and force control task, allowing the different dynamics of each be adjusted.

The **RMC70/RMC150E** controllers from Delta Computer systems, is one of the popular motion controllers used world wide for such applications where precise motion and ability to control the actuator in dual loop control mode (Position-Pressure/Force or velocity-pressure/Force) is needed. The addition of RMC70/150E motion controller to precisely control the position-force has several advantages.

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APPLICATION NOTE

MOTION CONTROLLER IN HYDRAULIC PRESS

Advantages

- Pressure spikes that damage machine parts and causes leaks can be reduced or eliminated. This decreases maintenance costs and extend the life of the machine.
- More consistent motion results in less wasted or rejected parts.
- Position and force can be changed "on-the-fly" allowing more flexibility in making the more challenging parts.
- Multiple sections or axes of a large press can be coordinated.
- Diagnostics and process monitoring can be facilitated using data obtained from the controller.
- Closed loop pressure control can ensure consistent product output quality from different machine operators.

With powerful control modes including dual loop position-pressure algorithms and multiple feedback types, the RMC70/RMC150E Series motion controllers provide optimum control to a wide range of hydraulic, electric, and pneumatic position and position–pressure/force control applications.

Communications with popular PLCs and HMIs is efficient, with support for numerous protocols, easy-to-use address mapping features, and mirroring of PLC addressing.

position pressure control limiting RMC150F RMC70 Temposonic Controller Controller Position Sensor V/I Converter Servo valve

Contact Details:

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Scope of Supply

- Real Time Closed Loop RMC70 / RMC150E Motion Controller
- MTS Magnetostrictive position sensor
- ♦ High response servo valve
- Manifold Blocks.
- Pressure Sensors