

STF ProTM Servo Transfer Feed Solutions

Make parts faster by replacing mechanically-driven transfer system with press control and servo transfer control on a common platform.

Overview

Global manufacturers are striving to create more flexible and productive manufacturing facilities. In many stamping rooms, this is being accomplished through the use of servo-driven, rather than mechanically-driven, transfer systems. Servo Transfer Feed (STF) systems deliver increased flexibility and improved productivity by allowing users to configure the paths of their transfer systems. Rockwell Automation offers a variety of STF Pro systems for customers.

Improved Productivity and Flexibility

Transfer presses originally powered the transfer rails via mechanisms linked to the flywheel. This approach dictated that the lift, clamp and transfer motions of the feed rails could move only a fixed distance. At best, sophisticated transfer presses offered just a few different discrete lift, clamp and transfer distances. These fixed-move distances, along with the need for repeatable parts transfer, limited production rates.

In the early 1980s, Rockwell Automation became the first controls supplier in the world to work with a press OEM to increase the flexibility of transfer presses. By using a programmable motion control system and high-performance servo drives and motors, users could configure the transfer of parts within a stamping press for the first time. By lifting a part only 125 mm rather than the 140 mm previously dictated by the mechanical transfer, productivity was increased by 0.5 strokes per minute (SPM) or more, resulting in a productivity increase of more than 160 parts per shift.

Constant Improvement

Over the past 25 years, a number of improvements in drive, motor and controls capabilities have evolved. DC servo systems have given way to AC common bus style servo systems. The common bus approach improves energy conservation and reduces maintenance requirements. Analog-based controls have been



superseded by digital control systems, providing increased performance and flexibility.

Rockwell Automation offers a range of solutions for STF Pro systems tailored to meet customers' needs. Drives and motors used for these solutions include high-performance brushless drives and motors where space is constrained, as well as induction style drives and motors used when cost reduction and ease of maintenance is important.

The ControlLogix Solution

Customers who use the ControlLogix control system want to run their presses with one control system for both their press controls and their STF systems. This dramatically simplifies overall system architecture.

The ControlLogix system is a commercial off the shelf architecture, freeing stampers from "black box" controllers that are difficult to maintain and troubleshoot. The STF Pro system implements the motion control application using easy-to-understand software. This open approach enables a wide range of personnel to understand and troubleshoot the system.

**Rockwell
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ControlLogix permits users to call on a single source for their entire control systems, from motors to motion controls. Such a solution, including application programming, installation and start-up, assures users of a worry-free installation.

Servo Transfer Feed Functionality

Typical STF Pro packages often use redundant position sensors to verify actual press position. Rockwell Automation's STF Pro application software provides the commands to the drives that enable the system to closely follow the motions of the press machine.

Proven Solutions

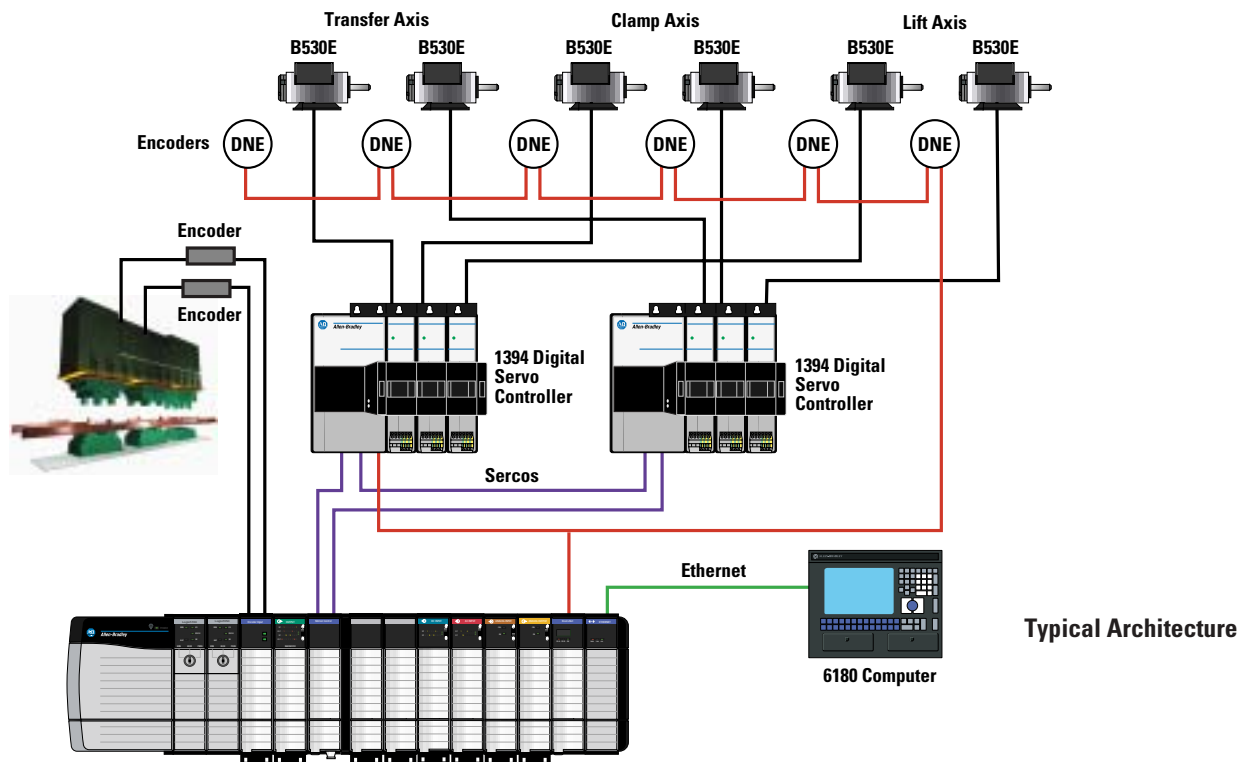
Rockwell Automation has applied its extensive expertise in Servo Transfer Feed systems to develop the hardware/software products users need to efficiently and reliably operate their complex machines. Routines for building a SmoothProfile™ motion cam are standard with Rockwell Automation's STF Pro

software, resulting in most repeatable parts transfer with minimum machine wear. The proven nature of this software shortens system development time and reduces the risks associated with developing such an application from scratch. The use of standardized, well-documented software helps make STF Pro systems more manageable and better supported in the field, resulting in improved uptime and reduced training costs. Proven solutions also encompass hardware design. A proven hardware solution ensures that all the details on correct electrical design are documented.

Rockwell Automation's proven STF Pro system is available as a hardware/software bundle or included in a complete turnkey system. For further details, contact your local Rockwell Automation account manager or local A-B or Reliance distributor.

For more information go to:

www.rockwellautomation.com/metalfforming



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