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Elastomer

Model 4000AG Crosshead

Overview

The Model 4000AG incorporates an automatic, servo-driven concentricity and wall thickness adjustment system. This new, proprietary system allows for adjustment of the core tube/tip assembly with simple, accurate joystick control. This enables the operator to easily minimize eccentricity, maximize concentricity, and reduce downtime during product changeovers.

In addition, the servo drives enable monitoring and adjustments throughout the run to account for lot-to-lot variations, day/night variations, and wall thickness corrections.

The compact design does not require a hydraulic pump system or hoses. This system also includes stepper-driven wall thickness adjustment, eliminating the requirement of hand tools and intrusive thickness measuring devices.

Additional features such as a tapered mandrel and highly-engineered flow paths ensure consistent flow through all speed ranges. Heat transfer efficiency has been optimized by using computer analyzed software for design of water-cooling jacket.

Models are available to accommodate 2-inch (50mm), 3-inch (76mm), 4.5-inch (102mm) and 5.5-inch (140mm) diameter braids.

Model 4000AG Crosshead

Features

- Tapered mandrel designed for stable concentricity
- Engineered flow path through head maintains equal flow across speed ranges
- Rigid fixed die holder maintains concentricity adjustment when dies are changed
- Slew Ring allows easy pin adjustment to change wall thickness via spring center return toggle switch
- Enhanced water jacket design for better heat transfer
- Manufactured from AISI 4140 heat treated steel with all inside surfaces coated with Armalloy for improved wear resistance, material flow, and clean-out
- Hydraulic mandrel removal with air-operated hydraulic pump and control valve
- Mandrel swings/slides out and is supported for safe and easy cleaning
- Standard models available to cover 2-inch (50mm), 3-inch (76mm), 4.5-inch (102mm) and 5.5-inch (140mm) diameter braid
- 2 and 3-inch models include pintle mount on a Davis-Standard hinge and scissor-arm support for mandrel removal
- 4.5-inch and 5.5-inch models include support cart with mandrel removal facilitated by linear rails on the cart
- Most existing Model 2000 and 3000 heads can be retrofitted to take advantage of the Model 4000AG automated design features (X-Ray gauge and controller is required to provide a signal back to the Davis-Standard PLC Controller)

Enhanced Features

- Computer analyzed optimized cooling design to increase efficiency
- Enhanced flow channel design using computer models and flow simulation tools
- Increased material processing efficiency due to shortened overall body length which decreases material dwell time

Benefits

Improved Workplace Safety

- Simplified startup – nothing to loosen or tighten to make adjustments
- Concentricity adjusted using joystick instead of adjusting bolts or manual wrench
- Wall thickness adjusted using spring center return toggle switch instead or manual wrench
- Increased safety benefit from less manual operator interaction
- Lower maintenance and downtime costs

Ease of Use

- HMI touchscreen interface streamlines functionality
- Less dependent on transfer of empirical knowledge for initial tooling setup and operation from operator to operator
- Less likely off-spec errors for “new” operators which yield more consistent on-spec results
- Simplified training due to simplified startup procedure
- Visual feedback for “off-spec” condition and instant correction
- Seamless integration with X-Ray gauge/controls – (X-Ray required)
- Design based on proven Model 2000 & 3000A Crosshead designs