

Title (en)

Electrohydraulic drive for process line winders, unwinders and other equipment.

Title (de)

Elektrohydraulischer Antrieb für Wickel- und Abwickelvorrichtungen und andere Einrichtungen in Fertigungsstrassen.

Title (fr)

Entraînement électro-hydraulique pour bobinoirs, dérouleurs et autres arrangements équipant des chaînes de production.

Publication

EP 0107959 A2 19840509 (EN)

Application

EP 83306411 A 19831021

Priority

US 43597582 A 19821022

Abstract (en)

An electrohydraulic drive for process line equipment, especially a spooler that winds and pays out an indefinite length of metallic strand, varies the output torque of a hydraulic motor by controlling its displacement and the pressure differential between its inlet and outlet. A valve controlled by a proportional actuator reduces the supply pressure of the hydraulic fluid in a feed line for the motor. A sequence valve located in a return line from the motor maintains the pressure at the motor outlet at a preselected and adjustable value. During braking, fluid from the return line is directed to a regeneration circuit that includes a flow divider. A portion of the flow is returned to the feed line to conserve the fluid flow. Another portion is returned to a supply reservoir for cooling. A servo-amplifier circuit includes an integrating amplifier that compares the actual rotation speed of the motor to a speed command signal. An analog multiplier produces a control signal for the proportional actuator that is the scale product of the output signal of the "speed" amplifier and a pressure limit signal. In the preferred form a tensiometer monitors strand tension and produces an input signal to a computer that modifies the pressure limit signals. The computer interfaces with other input and output devices and also controls the speed command and displacement of the motor. A hydraulic cylinder controls the linear traversing movement of the spooler under the control of a high speed servo valve that in turn is controlled by electronic circuitry. Position, velocity and rotation speed transducers for the spooler and a position transducer for the strand provide input signals to the circuitry.

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IPC 8 full level

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Cited by

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