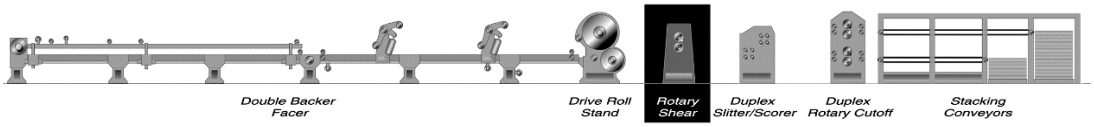
Smart Web AOC Shear Drive



Overview

Unico's Smart Web AOC Shear Drive can be used alone or as part of a multi-drive corrugator dry-end system. The drive controls the shear during automatic-order change (AOC) sequence and during scrap chop-out. The drive uses the same control algorithm as the Unico rotary cutoff knife drives and is therefore superior to typical drive packages.

Hardware

The system consists of a Unico 2000 family or 1000 family flux vector AC drive and a properly sized AC motor. A parallel interface module with 32 points of optically isolated, configurable I/O is supplied with the system. Optional communication interface modules support high-speed communications with a programmable logic controller (PLC).

Software

The software provided in the drive is Unico's standard embedded RCO software with additional, pre-engineered UEdit® AOC shear functionality. The shear portion of the program can be modified using standard IEC 1131 ladder diagrams and function blocks to further customize the drive for a particular installation.

Features

Chop-Out After Line Stop

The system provides a means by which the shear will automatically chop out a preset length of material after the line has stopped for a selectable time period.

Chop-Out Wet-End Scrap

A lineal tracking mode enables the drive to sequence other machine sections based on web tail position, such as during AOC, to start slitter head adjustment, or to initiate rotation of the triplex.

Scrap Reject Gate Control

The software is capable of controlling the scrap reject gate in real time with feed-forward timing to compensate for electromechanical delays during scrap chop-out mode.

Scrap Jam Prevention

Once a chop-out has been completed, the shear drive will not allow another until enough material has passed into the dry end. This eliminates jam-ups caused by short lengths of material getting stuck between the web shear and the cut-off knife.

Automatic Reference/Homing

Upon power-up, the shear will automatically go to a home position. The system readies itself for the first chop-out without operator intervention.

Features *(continued)*

Smart AC Digital Drives

Unico's 1000 and 2000 drive families provide powerful, flexible digital flux vector control for sophisticated, performance-oriented applications. The drives have been designed for complete flexibility and offer a variety of feedback, programmable I/O, and communication options. They incorporate a number of energy-conserving features, including line regenerative capabilities for exporting energy back to the power grid. Both drive families can take advantage of a modular DC bus configuration for sharing or recirculating energy among multiple drives.

Communications Protocols

The drive supports a variety of serial communication protocols for connecting to virtually any PLC or HMI. The drive can also operate in a stand-alone mode using the built-in keypad/display with an ANSI protocol connection to a simple serial display unit.

- ControlNet
- CC-Link
- Ethernet
- EtherCAT
- Profibus
- ProfiNet
- CANopen
- DeviceNet
- Modbus RTU

Inputs & Outputs

All inputs and outputs are user-enabled and are mapped to hardware I/O points to allow customization of the control. They are also accessible through a high speed serial communication link.

Inputs
- motor on request
- fast stop
- automatic
- continuous cut
- single cut
- jog forward
- jog reverse
- reference/home/auto
- scrap track
- scrap bin full
- motor air flow OK
- motor thermal OK

Outputs
- motor on
- no fault
- reject gate close
- reject gate open
- shear cutting
- shear ready

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Unico is a leading global innovator of motion-control solutions for industry. Founded in 1967, the company develops, manufactures, and services variable-speed drives, application-engineered drive products, integrated drive systems, and ancillary products that improve operations by increasing productivity, safety, and equipment life while lowering energy and maintenance costs.