

Fig. 1 - Veneer lathe

Electrohydraulic systems for wood industry

Innovative, robust and reliable

The growing demands of top performances, improved production efficiency and long service life in the severe working conditions of wood processing plants have led the manufactures to adopt up-to-date drive technology (Fig. 1).

Atos digital servoproportionals are the ideal solutions for the automation of this demanding sector thanks to the capability to perform high dynamic regulations and flexible controls of flow and pressure in closed loop; in addition the fieldbus interfaces (CANopen, PROFIBUS DP, EtherCAT, POWERLINK) permit an easier integration into the digital control structure of the machine by intuitive Atos E-SW-programming software (Fig. 2).

Atos, in cooperation with several Key-Oems, has developed specific solutions including the power unit and digital servoactuators, smart and compact units able to carry out "standing-alone" control of motion axis.

The power units are manufactured in compliance with the Machine Directive 2006/42/CE and supplied with technical handbook and the Declaration of Incorporation. Customized solutions are adopted for a direct integration into the machine structure with protective coating for aggressive ambient and devices to reduce the noise level down to 70 dB as silent couplings, anti-vibration dampers, 6-poles electric motors, etc. (Fig. 3).

Atos digital servoactuators consist of low friction servocylinder with built-in position and force transducers and servoproportional valve with on board digital controller.

The integral axis card performs closed loop motion cycles with alternated controls of position, speed and force according to the feedback of the integrated transducers (Fig. 4).

Some running examples of successful application in wood industry:

- **Block centering:** high dynamic servoproportionals allow the precise positioning of the log and thus optimum infeed in downstream machining units with significant scrap reduction
- **Veneer lathe:** digital servoactuator with combined position and force controls in a closed loop performs the peeling knife position to veneer the log plywood.
- **Chop saw:** position-controlled servoactuator drives the circular saws for cutting the trunks to length with high repeatability

To grant long service life in presence of high shock and vibrations Atos has implemented the following specific solutions:

- servoproportionals in "Rugged" execution to withstand mechanical shock up to 50 g
- off-line filtering and cooling units in the power units

Atos "digitals" are the optimal solutions for every modern application by fully complying with the requests of innovation, robustness and reliability:

- extended temperature range $-40^{\circ}\text{C} \div +60^{\circ}\text{C}$
- water & powder proof - IP66/67
- tropical coating on electronic PCB

For further information look at www.atos.com



Fig. 2 - Digital servoproportionals



Fig. 3 - Power unit conforming to 2006/42/CE

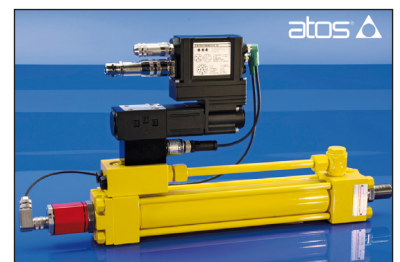
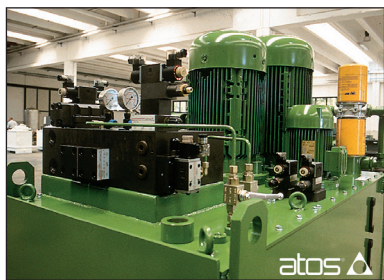


Fig. 4 - P/Q digital servoactuator



Power unit conforming to 2006/42/CE

Electrohydraulics for wood industry

Wood processing companies adopt up-to-date technology to comply with the growing demands of top performances, improved production efficiency and long service life in presence of high shock and vibrations.

Atos has developed a "Rugged" electrohydraulic line, specifically designed for wood process applications, able to withstand typical mechanical shock up to 50 g and high frequencies up to 55 Hz.

Atos servoactuators successfully carry out "standing alone" axis motion of veneer lathes and sawing units, performing combined position, speed and force closed loop controls.

They consist of a low friction servocylinder with built-in position and force transducers plus servoproportional valve with on board digital controller, fieldbus interfaced (CANopen, PROFIBUS DP, EtherCAT, POWERLINK).

Power units are manufactured according to the Machine Directive 2006/42/CE with customized solutions for a direct integration into the machinery plus protective coating for aggressive environments and low noise level down to 70 dB.

For further information look at www.atos.com