GERALD SCHEFFELS

PRODUCTS & SERVICES

Double act

IN ITS SEARCH FOR ADDITIONAL FUNCTIONALITY, SWISS LIFT-TRUCK MANUFACTURER STÖCKLIN FORMED A CLOSE PARTNERSHIP WHEN CHOOSING CONTROLLERS FOR ITS LATEST LINE OF ELECTRICAL TRUCKS

RIGHT: **Inside front view of the new Stöcklin EDP truck. The new tiller head is also supplied by Curtis**

Stöcklin Logistik of Dornach, Switzerland, has introduced a new range of tiller-operated low-lift trucks (EDP 16/20) and high-lift trucks (EDD 12 and EDS 10/14) with load capacities from 1,000-2,000kg. Also new are a low-lift truck and a high-lift truck with driver stand – ESP 20 and ESI 12.5 respectively – all of them with 24V drives. In terms of drives and controls, Stöcklin has always been forward-thinking – its trucks were equipped with AC drives as early as 2000.

The company's engineers were used to a high standard when they defined the qualities and function of the new drive system. "The complete drive unit had to be very compact and offer not only high performance, but also a high level of comfort and smooth operation," says Rüdi Wenk, Stöcklin's head of engineering. "With respect to the control system, we wanted to use CANbus technology and to install a variable-speed lifting function.

"The complete drive and control system had to be easy to service and be programmable with a mobile unit. We also had economic targets to obtain value for money in respect of the control – even more so than that of its predecessors."

Driving ambition

These were ambitious goals. But it is part of Stöcklin's engineering strategy to co-operate closely with carefully chosen suppliers, and in discussion with Curtis's product specialists, Stöcklin decided to be among the first customers to implement the new Model 1298 control into its trucks.

This integrated AC traction and hydraulic system controller completes a new range of controls that Curtis has designed and introduced over the last two years. It combines an advanced AC traction motor control with solid-state DC hydraulic pump and proportional valve control to provide a complete economical integrated package. Developed primarily for Class 3 trucks, it offers the functions that Stöcklin specified. For example, the control allows for variable speed as well as soft start and stop control of the lift and lower functions.

Many of the functions that Stöcklin uses are already incorporated in the control as standard, as it contains a fully featured generic software for walkie and walkie-stacker functions. And if the OEM engineers want to implement additional functions, they can easily add them with alternative vehicle control language (VCL) programming. Indeed, Stöcklin engineers have confirmed that this VCL – an innovative feature of Curtis's control systems – is easy to operate.

The Curtis Model 1298 motor speed controller is employed for driving and lifting functions. These two functions can be superimposed, ensuring smooth operation and high productivity. In the versions with initial lifting, this function is also integrated into the control system. In the new high- and low-lift trucks ESP 20 and ESI 12.5, there is a Model 1222 Curtis electrical steering controller.

Apart from the variable-speed lifting and the stop control functions, Stöcklin was able to implement additional functions in the new truck range through the state-of-the-art control system. Wenk explains: "An interesting new safety function is the LOS system. When the control system detects a fault, driving and lifting is – independent of the kind of failure – restricted to certain speeds, or certain functions are no longer possible." The control also allows for fine-tuning of driving parameters; a feature the operator will notice immediately if accustomed to the predecessors of Stöcklin's new trucks.

Steering the right course

The same is true for the electrical steering controlled by the Model 1222. Stöcklin was able to implement a two-stage speed reduction independent of the steering angle, and a speed-dependent sensitivity of the steering wheel – features that combine safety and productivity. Many functions, such as the halting of the initial lifting and the tiller-switch, are actuated by sensors rather than mechanical switches – these are easily integrated into the control system.

Curtis also delivers the man-machine interface. The tiller head of the tiller-operated vehicles is a joint development based on Curtis's TH series. Due to the large rocker switches for the driving functions and an emergency reverse switch, it offers good ergonomics and maximum safety.

Additional functions can be included, too, because up to four proportional switches are integrated in the housing, and, of course, the tiller head interacts perfectly with the Curtis control system. Electrical installation at the Stöcklin factory is easy, too – there is just one single electrical connector to be plugged in.

Stöcklin engineers are very satisfied with the new control system, and describe the co-operation between themselves and Curtis as "exemplary". The partnership was forged on the condition that Stöcklin's Germany-based technical support manager, Thomas Hetmeier, could work closely with Curtis's US production facilities and HQ. Wenk says, "There were great technical and economic advantages to the co-operation, which was based on mutual trust. The Curtis team carefully responded to our wishes – this is how it should be!"

ABOVE: **This snapshot gives an overview of Stöcklin's forklift programme. From left to right: ESP with operator, EFi, EDS and EDD.**

LEFT: **Final assembly and test of the EDD truck**

Stöcklin is currently introducing the new trucks onto the market and is experiencing high demand. It seems highly likely that the new control system, offering additional functions and higher levels of safety and productivity, is contributing to customers' interest in these machines. **iVT**

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