

Press Release

Control systems and process control at the highest industry level

Reaching top functionality with innovative standard software

New DCOS control system was presented at the AUTOMATICA in Munich.

An estimated 300 million people worldwide have bronchial asthma. About 5% of children suffer from this chronic infection of the bronchial system. However, the exact origin of the disease is still unclear. Allergies, as well as genetic factors, play an important role. However, it is certain that with a series of proven treatment methods the symptoms can be relieved and the number of dreaded asthma attacks can be reduced. One of the most effective therapies is inhalation. An efficient, easy to handle inhaler facilitates the treatment of the chronically sick and improves quality of life. The automated assembly of drug delivery systems requires the highest quality standards, as always when a person's health and life are at stake.



When assembling an inhaler for the pharmaceutical industry, the first step is to screw the top part of the case to the bottom part and then the mouthpiece is clipped into the casing. In medical technology, mistakes in the assembly are not acceptable. Highest possible process reliability must be realized in the development and construction of the respective assembly system. Applicable product liability law obligates all manufacturers. Who is liable when defective products that are made of several different parts appear on the market? Traceability of the individual components must be guaranteed for these cases.

Thus, the controller of a modern assembly system has tasks to fulfill that are becoming increasingly complex. The new DCOS (**DEPRAG CONTROLLER SYSTEM**) that the automation specialist DEPRAG SCHULZ GMBH u. CO. was presenting at the AUTOMATICA 2010 is user-friendly and has high functionality. DCOS controls, records, documents, and analyses. Experts visiting the AUTOMATICA from the 8th to 11th June 2010 to find out about the latest developments in assembly and assembly engineering, were introduced to DCOS, a new assembly and process control system of the highest possible industrial level. DEPRAG was presenting it in detail at exhibition stand 311 in

Hall A1. Solutions from decades of experience in the fields of feeder, screwdriving, assembly, and measuring technologies were combined in its development.

Control system DCOS demonstrates the diversity of the PC world. Control unit DPU 100 (**DEPRAG PROCESSING UNIT**) is based on an industrial PC that works with Windows CE system software. It can also control complex motion sequences with extremely short cycle times (typically < 6ms). A 6.5-inch color touchscreen with VGA resolution offers greatest user comfort in operation and display of operating conditions. Two USB ports situated on the front, allow the user to connect further peripherals (for example mass storage devices or keyboards). The DPU 100 can access the company network or the World Wide Web by a freely available EtherCat-Port. Integrated networkability, unproblematic connection to SCADA and MES systems, optimal data administration and storage, and access to common PC applications such as browsers, data backup, and remote access present practically infinite possibilities.

Depending on the task, control cabinet DSEC 20 to 40 (**DEPRAG SAFETY EXTENSION CONTROLLER**) is used with the DPU100. 32 inputs and outputs via EtherCAT Fieldbus, a 24V DC power supply with 10A, and security components are included in these control cabinets. The DSEC20 is used in manual workstations and small screwdriving and assembly lines. The additionally integrated Profibus master module allows unproblematic connection of all common Fieldbus devices. Due to the single-phase supply, the control cabinet is compact and can easily be installed in small workstations.

The DSEC30 is the right solution for screwdriving and assembly stations that have higher power and security requirements. Its three-phase current supply enables connection of three-phase drives, for example for rotary indexing tables or belt drives. The integrated safety controller realizes the highest security level PL e if needed. The connection of the security components through software offers high flexibility when processing the single components at the highest security level.

Additionally, the DSEC40 can control up to 3 NC axles. Three stepper motors with their respective power sections are included as standard. Other applications with servo or linear motors are also available on request. Screwdriving or other assembly systems with axle systems are part of the DSEC40's application range.

However, die DCOS is especially attractive because of its innovative standard software! Until now, with every



customer order, the special software had to be designed, and each system had to be reprogrammed, which was very time consuming and expensive. The new standard software was designed for DCOS, with various features. It can easily be adjusted to meet specific customer requests, quickly and without hassle. The software is available in four different packages: CLASSIC, CLASSIC-plus, ADVANCED and PROFESSIONAL. The user can choose from these packages and receives optimal control and a clearly defined range of functions.

The software package CLASSIC covers the basic demands for machine control. It contains general functions such as menu-driven image selection, access control according to user profiles, and initialization files on the operating system level. Plus basic functions for machine data recording (for example parts or day counters for good/bad production parts), applications for axle control or commissioning aids (diagnosis/maintenance) for peripherals. The package CLASSIC-plus supplements this module by the option of remote maintenance via Internet (VPN) or direct point-to-point connection via modem (ISDN, telephone). Therefore, the reaction from service technicians is quick and flexible.

A feature available in ADVANCED is a dynamic language switch-over to allow depiction of language specific symbols, such as Chinese characters. Furthermore, screwdriving controllers or other external devices can be parameterized or programmed by direct access to operating systems services. An example: a MINIMAT®-EC screwdriver with sequence controller system AST10 is to be programmed with a new screwdriving program. For this purpose, the AST10 surface can easily be transferred into the DPU100 by HTTP, and can thus through direct access, realize a modified screwdriving program with changed torque or rotation speed. Unthinkable with a conventional PLC, it is now easy with DCOS. ADVANCED is rounded off with a cycle control to support production process optimization and a diagnostic and maintenance module that aids the user in maintenance and increases machine efficiency.

PROFESSIONAL is the highest configuration level of the DCOS standard software. The efficient utilization of the whole assembly system can be examined and documented, statistically record rejection rates (bad parts); can document system downtime, as well as system reliability. Order and shift administration is another important feature. The documentation of process data and the respective analyses provide important information about machine capability. Graphical representation of measurements and extra documentation features round the package off.

For decades, DEPRAG has been working on screwdriving and





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feeding technologies, the planning, and construction of assembly systems and the measuring technology necessary for process reliability. DEPRAG's engineers are familiar with all problems and wishes of assembly system operators and assembly workers. Operation of the control system is accordingly user-friendly. The straightforward color touchscreen can be operated by finger or pen and is easily legible from larger distances.

DEPRAG controllers are based on the specialist's many years of competence in screwdriving stations, feeding systems, and assembly systems. Whether basic, standard or complex, DCOS system controllers are easily, quickly, and inexpensively created using proven and standardized solutions that excel through their process reliability. The standard software in its various versions allows for a quick and accurate creation of machine workflow and user interfaces. The programs are all the same in their basic structure. This allows for short training periods for operators but is also advantageous for service and remote maintenance. All DEPRAG technicians are familiar with the software and not just a few "specialists".

The DEPRAG SCHULZ GMBH u. CO. situated in Amberg, Germany is represented by 600 employees in over 50 countries. For decades, DEPRAG engineers have been working on innovative concepts for automation and offer full service to almost all industrial sectors. DEPRAG is not just a supplier for system integrators with innovative screwdriving and feeding technologies, it also offers extensive automation solutions. A "one stop shop" company, that takes full responsibility. A trait that is especially valuable for the customer when it comes to service and maintenance.

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