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CR Control® cleanroom control system

Mobile control of cleanroom systems - tablets and smartphones for monitoring



The SCHILLING CleanRoomControlSystemCR Control® allows the convenient oversight and control of all individual cleanroom components.

Mobile control of cleanroom systems – tablets and smartphones for monitoring the operation of a cleanroom system requires the continual oversight and recording of defined set values, the precise configuration and tuning of all components in the cleanroom and air conditioning systems and most especially the immediate display and correction of problems. The reliable control and operation of complex technology is therefore one of the most important aspects in setting up a cleanroom. SCHILLING ENGINEERING, with the new version of its CR Control® control system, has now released an app that makes the mobile monitoring and control of cleanrooms possible using tablets and smartphones.

The regulation and monitoring of a cleanroom system includes many different components, such as the measurement and recording of particle counts,

temperature and humidity in the cleanroom and locks, the setup of the laminar flow modules and air conditioning systems and the monitoring of door functions. Centralising the parameters in a single place and easy-to-understand user guidance significantly simplifies the operation of a complex cleanroom system, thereby increasing the safety, reliability and productivity of sensitive fabrication processes.

The innovative cleanroom company SCHILLING ENGINEERING, with a control system developed in-house, is one of the first companies in the world to have brought the ever more important process of central, intuitive user guidance to comprehensive cleanroom technology, and has now gone one step further. The user-friendly control system can now be called up and operated from tablets and smartphones regardless of location, using an app.

Mobile control of cleanroom systems - tablets and smartphones for monitoring

The mobile application is a refinement of the SCHILLING CleanRoomControlSystemCR Control® that has already been in extensive use for several years, which the cleanroom specialists offer their customers to control cleanroom systems. The patented multifunctional tool simplifies the regulation, control and monitoring of cleanrooms and is controlled from a central touch screen. The term „control system“ really describes only a small part of the functions that CR Control System provides. It is an interactive regulation, control and monitoring system that combines the complex processes of cleanroom technology, air conditioning technology and monitoring into a single device. All parameters are shown clearly and recorded for monitoring, but particularly individual functions can immediately be controlled and regulated.

Measurement is carried out by sensors that monitor pressure, humidity and temperature and are connected to the control system through interfaces. Additional connections are provided to the cleanroom modules and air conditioning systems. The values of up to 10 cleanrooms and 60 laminar flow modules can be displayed simultaneously on a single monitor, and set values can easily be configured. Continual testing of the level of contamination and the performance of all filters in use is important to have a replacement ready and waiting, preventing downtime losses. One special feature of the innovative system is its unique ability to select very complicated, separately controlled air conditioning systems directly and clearly through the same system. Other functions, such as door control, are monitored - even light levels can conveniently be set.

The different features are easily selected using an intuitive user interface, and are password-secured at different levels to protect them from misuse. Upon customer



Control of cleanroom systems can be carried out flexibly from anywhere using a tablet or smartphone.

request, local process machines such as automation or testing systems can also be integrated into the control system. This permits all processes to be accessed from a single point.

During development of the control system, particular value was placed on an immediately comprehensible user interface. Procedures in which immediate intervention is required are made clearly visible with a red colour, or trigger a warning sound. Maintenance displays show the level of filter contamination and service intervals.

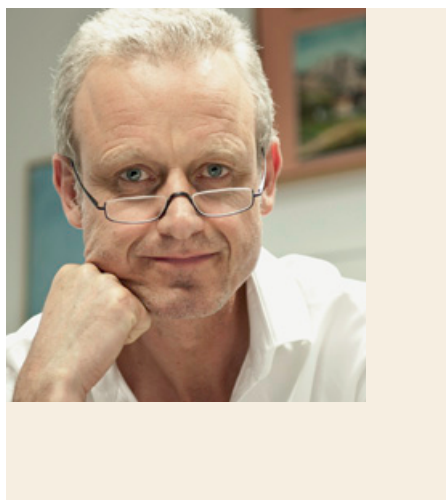
An entirely new and to date unique feature of the system is that an app is now available upon installation of the system that permits its control from a tablet or smartphone, entirely flexibly and from anywhere.

The patented SCHILLING CleanRoomControlSystemCR Control® has been used for the control of CleanCell cleanroom systems

since 2010. The multifunctional control unit has been entirely satisfactory in the field and is now installed with nearly every cleanroom system from SCHILLING ENGINEERING. Mobile tablet control now permits cleanroom managers to check the functions of their cleanrooms from nearly anywhere in the plant or even from elsewhere and even allows them to make controlling changes to ensure flexible reliability.



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Dear subscribers,

this autumn there were some new highlights for me:
- I was very pleased to meet familiar as well as new people and to have good conversations at our booth on the two fairs TechnoPharm and cleanzone.
- I was very content with the latest printline which seems to be well received among all our subscribers.

All this motivate us and give us reasons for further working on our concept in order to improve it more and more.

Kind regards


Reinhold Schuster



The map shows where the readers of the cleanroom online newsletter are coming from: if you want to get in contact with these readers please contact us.



NEW

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Fungal Spores and Disinfectant Residue Control Measures

Contamination Control in Cleanrooms

Autor: Jim Polarine & Elaine Sartain

Spore forming organisms, bacterial endospores such as *Bacillus* species and fungal spores, such as from *Aspergillus* species, can present considerable challenges to cleanroom microbial control programs. While everyone recognizes that bacterial endospores are the most resistant forms, not everyone recognizes the challenges that fungi and fungal spores in particular can present. Fungal species, such as *Aspergillus brasiliensis*, are ubiquitous and are introduced into cleanrooms through raw materials, equipment, and personnel egress. Additionally, poorly designed environmental control systems, for example, with inadequate pressure, humidity and temperature controls, can

make it very difficult to maintain acceptable environmental conditions. As facilities age, and as experienced, disciplined personnel move to other jobs or facilities, contamination control challenges may become greater.

Although the use of good routine disinfectants is essential to maintain adequate environmental control, while minimizing damage to sensitive surfaces, e.g. polycarbonate curtains, certain flooring, the use of a sporicidal agent must be incorporated in order to address resistant forms, such as fungi and fungal spores.

Fungal isolates commonly found in cleanrooms include: *Aspergillus* spp., *Chaetomium* spp., *Trichophyton* spp., *Fusarium*

spp., *Cladosporium* spp., *Paecilomyces* spp., *Stachybotrys* spp., *Rhizopus* spp., *Penicillium* spp., *Mucor* spp., *Alternaria* spp., and *Curvularia* spp. The variety of fungal spores is quite impressive. Although some degree of effectiveness against fungal spores may be possible with routine, non-oxidizing, disinfectants, e.g. phenols and quats, in general practice, fungal spores will also require the periodic use of strong sporicidal agents in order to maintain adequate control.

Table 1 provides log reduction data at two different exposure times for common disinfectants and sporicidal agents used against some of the more common fungal spores found in cleanrooms.

As you can see from the data provided by table 1, while routine disinfectant products may have some efficacy against fungal spores, it is highly variable, depending on both species and chemistry being used. Indeed, even with strong sporicidal agents, performance against fungal spores may vary depending upon the species, and additional contact time or higher concentrations may be required in order to achieve environmental control goals.

The use of disinfectants and sporicides is critical for microbial contamination control within pharmaceutical, biotechnology, and medical device industries. However, their repeated use can result in unacceptable residue on treated surfaces over time. These residues are potentially problematic from visual, safety, and product integrity perspectives. Residue is most apparent (and becomes visible to the unaided eye) at about 4 mg/cm² on stainless steel, but can be difficult to see on other surfaces commonly found in cleanroom environments (see Fig. 1).

Residue removal is part of a robust cleanroom management program. Residue build-

Table 1.

Product	<i>Aspergillus brasiliensis</i> ATCC® 16404™		<i>Aspergillus fumigatus</i> ATCC® 96918™		<i>Trichophyton mentagrophytes</i> ATCC® 9533™		<i>Stachybotrys chartarum</i> ATCC® 16275™		<i>Penicillium notatum</i> ATCC® 10108™	
	30 sec	60 sec	30 sec	60 sec	30 sec	60 sec	30 sec	60 sec	30 sec	60 sec
Quat A (with 21% IPA)	0	0.1	0.4	0.5	2.1	2.5	0.9	1.3	1.6	2.1
Quat B 1:128 (625 ppm)	2.1	2.2	2.4	3.1	5.6*	5.6*	3.7	5.4	3.8	4.9*
Quat C (QACs & Biguanide)	0.4	0.3	0.5	0.6	0.2	0.1	0.6	0.9	0.6	0.8
Phenol high pH 1:128	1.1	1	0.5	0.5	2.4	5.1*	0.7	1.4	1.4	1.9
Phenol low pH 1:256	0.3	1.2	0	0.8	5.4	5.4*	0.7	1.9	1.1	2.4
Bleach (0.525%)	0.2	0.3	0.3	1.1	5.4*	5.4*	0.2	1.3	0.5	4.9*
70% Isopropyl alcohol	1.3	1.9	1.9	5.6*	4.9*	4.9*	6.0*	6.0*	5.7*	5.7*
H ₂ O ₂ /PAA RTU	1.3	5.5*	5.5*	6.0*	5.1*	5.1*	3	6.2*	5.7*	5.7*

* Indicates complete kill

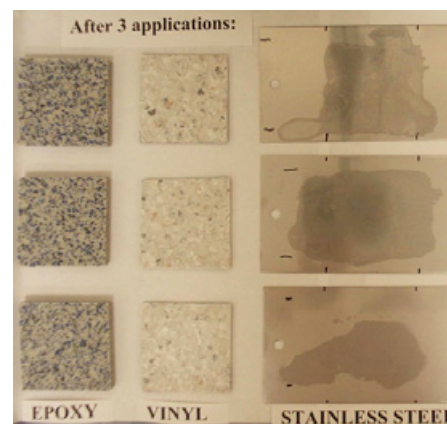


Fig. 1: Appearance of residue on typical cleanroom surfaces (distance of approximately 1.2m); 3 applications of 0.5 mL per coupon. Top row: low pH phenolic at 1:256; middle row: high pH phenolic at 1:128; bottom row: ready-to-use sporicide (blend of peracetic acid and hydrogen peroxide). The bottom row vinyl and center row epoxy coupons are enlarged (distance of approximately 0.3 m).

Contamination Control in Cleanrooms

up can be mitigated by use of a rinsing agent to remove disinfectant and sporicide residue at defined intervals or as needed. Water for injection (WFI) or 70% isopropyl alcohol (IPA) are commonly used to remove these residues. In some instances a formulated cleaner, such as ProKlenz® Booster High Performance Detergent Additive, may be needed. Residues from the cleaner may also need to be removed with WFI or IPA, depending upon the surface. The frequency of rinsing depends on several different variables including but not limited to the disinfectant(s) used, application condition, surface material, facility design and process residue interaction. A conservative approach is to rinse after each application; however, this is

not standard practice and often prohibitive due to resources or concerns about leaving water, a potential growth medium, on surfaces. The majority of manufacturing sites determine the frequency of rinsing based on visual, tactile, safety or product quality concerns. The rinsing agent and frequency of rinsing must be defined in the cleaning and disinfection procedures. The data in Table 2 suggests that the effectiveness of residue removal is impacted by the cleaning agent used and by the application technique.

Conclusion

In general, a sporicide is recommended for control of fungal isolates on most clean-

room surfaces. In certain cases (e.g., two log reduction desired), phenols, quats or 70% IPA may be used. Results can be strain-specific and surface-specific, so in vitro coupon (surface) testing is advised. Residue removal is necessary for a complete cleaning and disinfection program and should be performed as needed based on visual or tactile observation. Effectiveness of rinsing programs depends on many factors, including the composition of the residue (which may be difficult to determine), the type of rinsing agent, the surface being treated and the frequency of rinsing.

Cleaning Agent	Immersion	Wiping	Spraying	Flooding	Average %
Acidic Cleaner	12.3	4.6	34.3	2.1	13.3
Alkaline Cleaner	3.8	9.6	8.3	2.7	6.1
Neutral Cleaner	1.7	8.6	11.1	3.9	6.3
IPA, 70% v/v	10.2	12	27.7	4.6	13.6
DI Water	7.8	11.1	31.5	4.4	13.7
Average %	7.2	9.2	22.6	3.5	

Table 2: Percent residue* remaining on stainless steel coupons after use of cleaners with four different removal techniques. (*-43 mg per coupon of low pH phenolic residue, representing 25 applications of 0.5 mL)



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Pharma-Tac Plus Hanger Label Receives German Printing Industry's Innovation Award

PrintStars Award 2014: Schreiner MediPharm Recognized for its Outstanding Product Development Expertise

Schreiner MediPharm is one of the winners of this year's prestigious „PrintStars“ Innovation Awards by the German Printing Industry. The Pharma-Tac Plus label for infusion bottles received a gold PrintStars award in the „Labels“ category. All in all, more than 900 innovative printed products were entered.

The Pharma-Tac Plus label combines product marking for infusion bottles with various integrated functions, including a booklet with sufficient space for extensive text in several languages, a secure and practical hanger, and detachable label parts for recording the medication. With this label, Schreiner MediPharm has developed a sophisticated solution that adds value to the pharmaceutical manufacturer's end product and can be used in existing dispensing systems without any problems. In addition, it helps optimize processes carried out by medical staff. The Pharma-Tac Plus label allows end users to safely and efficiently hang infusion bottles. It also ensures that all important product information is readily available and facilitates recording of the administered medication.

„For this development, we combined our knowledge of material and adhesive technologies as well as dispensing, printing and



die-cutting techniques with many years of experience in the pharmaceutical market. This enables us to produce innovative labeling solutions with diverse additional benefits,“ says Ann L. Merchant, President of Schreiner MediPharm. The Pharma-Tac Plus label offers a prime example of Schreiner MediPharm's expertise, and the PrintStars award is actually the third recognition this special label received. This year it already

won an innovation award from FINAT, the international association for the label industry, and last year it won a prize from the North American label association TLMI. These accolades attest to a high level of expertise in printing technology and exceptional development expertise.

Schreiner MediPharm, a business unit of
D 85764 Oberschleissheim

Special palletiser for the assembly of pharmaceutical products

Supplied precisely and targeted

Due to the increasing cost pressure in the medical technology sector, effective production automation is increasingly becoming a key competitive factor. This is particularly evident during the assembly process. Here components are required to be provided fast and precisely, in order to subsequently feed them in to predefined position and on to the various processing steps. For their application, to automate the assembly of pharmaceutical products efficiently, a division of Gerresheimer AG thus selected a special palletiser from the Black Forest specialist IEF-Werner. This innovative solution achieves short cycle times, can be operated under cleanroom conditions and furthermore can be fluently inserted into the customer-specific manufacturing line.

Gerresheimer AG with headquarters in Düsseldorf is a global leading partner of the pharmaceutical and healthcare industry. The company produces a wide range of pharmaceutical packaging as well as products for the easy and safe administration of medication with about 11,000 employees in more than 40 plants in Europe, North and South America as well as in Asia.

“The complete manufacturing chain from injection moulding through assembly and inspection up to packaging takes place in cleanrooms of ISO class 8”, Eduard Maier, project manager at the Wackersdorf site of Gerresheimer, describes. Using its highly automated machinery, the company produces millions of different customer-specific plastic systems seven days a week, 24 hours a day. In the manufacture the specialists, therefore attach high importance to availability, speed and thus to cost efficiency, but particularly to a consistent high quality. Therefore, for the assembly of the pharmaceutical products, the medical technology company opted for a palletising solution from IEF-Werner, adapted to this specific application.

Trouble-free operation

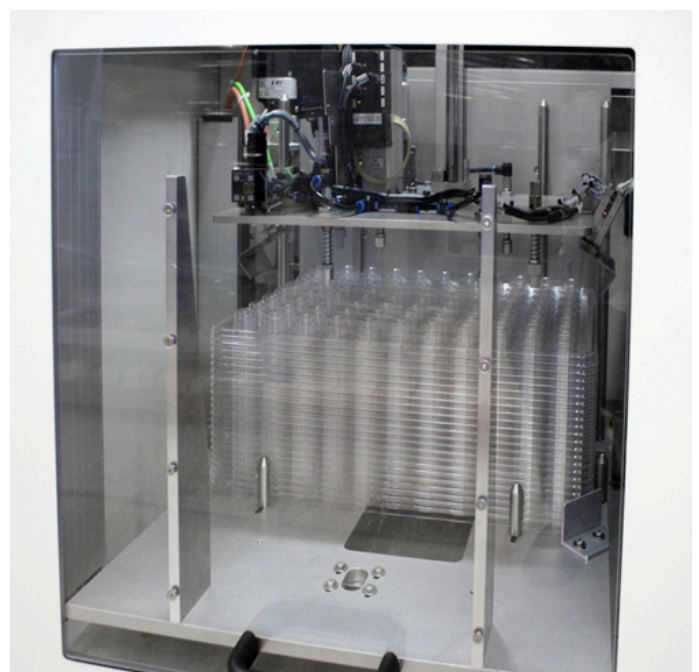
“Gerresheimer already uses several of our special machines successfully”, describes Stefan Deck, product manager for transfer and palletising systems at IEF-Werner GmbH. “These are unmanned feeding, assembly and palletising systems.” For the product assembly the specialists had to go one step further with this palletising solution. Since this equipment has to be integrated seamlessly into the already designed assembly line and thereby be connected to an indexing table. The palletiser shall insert components line by line in designated trays with dimensions of 350 x 470 millimetres. “For this application special disposable trays are chosen”, Deck emphasises. They are extremely thin and not very dimensionally stable, but although have to be automatically handled reliably. “This was a challenge regarding stacking behaviour, gripping possibilities, stability and also separability”, the product manager explains.

Custom tailored

The specialists of IEF-Werner developed a compact palletising system with an open structured and modularly. Therewith it was possible to adapt this special solution to the individual custom task. A crucial customer requirement was to operate the equipment in cleanroom class 8. Furthermore a careful handling of the medical components had to be ensured. Stefan Deck opens a drawer on the equipment. “50 empty trays can be stacked here”, he says. “The equipping is carried out by an employee”. When the drawer is closed and the special palletiser is in operation, the first tray is removed from the drawer by a servo controlled de-stacking unit equipped with IEF components, moved on the Y-axis and placed above a shuttle. By means of a wiping unit the tray is detached. Now the pallet is directly positioned by the shuttle under a fourfold suction gripper with rotary unit. Four devices each are removed from the customer-specific transfer nest quickly, quietly and exactly by the gripper, are then turned by 90



The special palletiser of IEF-Werner achieves short cycle times, can be operated under cleanroom conditions and could be integrated in the customer-specific production line without any problems. (Image: IEF-Werner GmbH)



The drawer with the empty trays: The special palletiser cannot start before it is closed. (Image: IEF-Werner GmbH)

degree and placed in the empty tray line by line – eleven lines with eight modules each. For this purpose they are placed into the transfer nest in the grid spacing of the tray by the upstream manufacturing facility.

Put on efficiency

In the meantime a further empty tray is separated and hand over

Supplied precisely and targeted

to a second shuttle. This cover tray moves beneath the first tray, situated in equipping position, to the stacking position. Here it is lifted from below in a latch separation. When the first tray is equipped completely it moves as well into stacking position. There it is carried by the shuttle beneath the empty tray that now serves as cover for the equipped pallet. Then the shuttle runs back, to take over and place the next empty tray again beneath the product handling. This change takes less than five seconds, as the second tray is also being equipped, it is positioned by the shuttle in stacking position. The system lifts it beneath the first two trays. The stack that now consists of one empty and two filled trays is placed on a buffer belt line and can be forwarded directly to the packaging station. „For this task we have chosen our transfer system posyART“, IEF product manager Deck explains. As with this reliable, flexible and precise modular system that consists of standard components almost all tasks in the transfer, assembly and logistics sector can be solved. The modules are transported on workpiece carriers across the transport line and positioned precisely for the next work step.

Everything from one source

“Following customer requests for the special palletiser we have chosen a Siemens S7 control that is equipped with an operator panel of type TP700“, Deck explains. With this the operator receives for easy handling a touch panel by default. The user interface of the control is structured ergonomically and intuitively in accordance with IEF-Werner standard and integrates all necessary functions for the operation of the system. Furthermore a modular servo drive SINAMICS S120 is used. This decentralised drive contains many compatible components – for example the multi-axis application required here. For the communication with the customer-specific system the palletiser is equipped with a Profinet interface. The major part of the components used is supplied by IEF-Werner, for example the linear axes installed in the handling or the transport system posyART in special width. “Whether grippers, motors or just the control – depending on customer requirements we supply the entire system from one source“, IEF-Werner expert Deck says. For the automation specialists this includes user support in project planning and finding solutions as well.

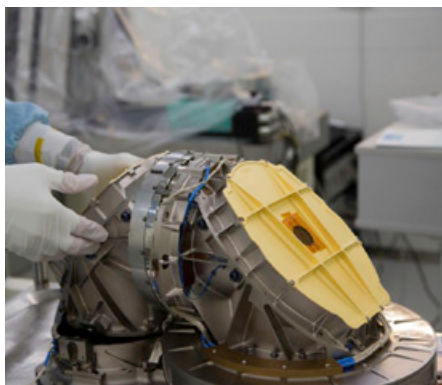
IEF-Werner GmbH D 78120 Furtwangen

Synopta GmbH develops and produces highly precise beam steering mechanisms for optical space communication systems. The first of those mechanisms has been successfully tested in orbit on 10 September 2014 and commenced operations on-board an Earth observation satellite of the European Space Agency.

Swiss Precision Mechanism Successfully Tested in Space

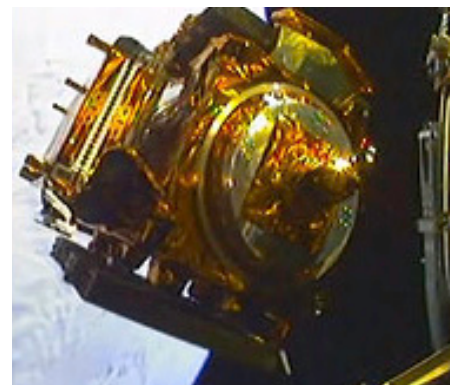
On 3 April 2014 the European Space Agency (ESA) has launched its Earth observation satellite Sentinel-1A from Kourou, French-Guayana. The satellite is operating at an altitude of about 700 km above ground. Sentinel-1A is the first of the Sentinel-Fleet consisting of a number of spacecraft planned to be launched during the next years in frame of ESA's Earth observation program Copernicus. The satellites of the Copernicus program will collect a large variety of data that are getting increasingly important, for instance, for land surface monitoring, disaster or crises management, maritime research, monitoring of the atmosphere or for climate research.

The Earth observation data gained by Sentinel-1A are transmitted to the user on ground by a Laser Communication Terminal (LCT) built by Tesat-Spacecom, Backnang (Germany). Those terminals offer so far unprecedented data transmission rates of up to 5.6 Gbit/sec either towards other satellites or directly to ground. A central element of the LCT was delivered by Synopta GmbH, an innovative SME from Eggersriet (SG) in Switzerland; under contract of Tesat-Spacecom Synopta has developed and manufactured the so-called „Coarse Pointing Assembly (CPA)“ for the LCT. The CPA was extensively



tested on ground and passed all qualification tests necessary for long term operations in space. The CPA is used for precise pointing of the LCT laser beam either towards a counter terminal embarked on another satellite or to an optical ground station. The angular pointing accuracy of the CPA is in the order of a few thousandth of a degree. The successful demonstration in orbit on-board Sentinel-1A was an important milestone for Synopta.

The Earth observation data generated by the Sentinel-Satellites during their future routine operations will be transmitted via the geostationary satellites of the European Data Relay Satellite (EDRS) System. Orbiting at an altitude of 36'000 km above ground



those satellites will operate as relay stations receiving data from the Earth observation satellites and transmitting them to the users on ground. The EDRS satellites will also be equipped with Tesat-Spacecom LCTs for which Synopta is delivering the CPAs. The first EDRS satellite will be launched later this year.

In addition to the CPA beam steering mechanisms Synopta delivers also the Optical Ground Stations used for optical communication links with satellites in geostationary orbit or low Earth orbit.

Synopta GmbH
CH 9034 Eggersriet

Positive result for POWTECH and TechnoPharm 2014



- Very good mood among the 15,000 trade visitors and almost 1,000 exhibitors
- More international: over one-third of the exhibitors and visitors come from abroad

POWTECH and TechnoPharm 2014 can be summed up positively after three days of productive exhibition activity and knowledge transfer. With altogether 929 exhibitors from 30 countries and some 15,000 trade visitors, it is the world's largest and most important event for new trends in processing and handling powder and bulk solids and for innovative technologies for the manufacture of solid, semi-solid and liquid drugs.

19th - 21st April 2016: POWTECH, TechnoPharm, PARTEC, Nuremberg (D)

"We have a successful autumn event to show," sums up Willy Viethen, Director Exhibitions POWTECH and TechnoPharm at NürnbergMesse. "This year's exhibition combination has sent a positive signal to the relevant industries. The exhibitors report very good talks held in the past three days. This is all the more encouraging, as the German machinery construction sector is registering heavy drops in the number of orders. Here

the trade fair duo is clearly showing the growing optimism within the industries."

Although the event is weaker in the autumn than in the spring, the mood in the exhibition halls was exceptionally good. Thoroughly encouraging from the exhibitors' viewpoint was the keen interest shown by the visitors from abroad – they accounted for over a third of the total number of visitors. The response from the visitors is also positive. Nine out of ten visitors in the surveys said they were extremely satisfied with the products offered at the high-tech exhibition duo.

The thousands of machines and pro-

ducts in the six exhibition halls represented the latest state of the art. Nowhere else can process engineers find such a comprehensive but compact overview of new products for mixing, size reduction, screening, dosing, weighing and analysing solids and semi-solid materials – for virtually all industries, e.g. chemicals, pharmaceuticals, food and mineral processing.

The next event will take place in the Exhibition Centre Nuremberg from 19–21 April 2016 – together with PARTEC, the International Congress on Particle Technology.

NürnbergMesse GmbH D 90471 Nürnberg

Management buyout at Reinhausen Plasma GmbH

Relyon Plasma – innovative plasma technologies for surface pretreatment

Following a management buyout, on 1st July 2014 Dr. Stefan Nettesheim and Klaus Forster took over Reinhausen Plasma GmbH, including all assets and patents. On 1st October 2014, the company was renamed relyon plasma GmbH.

The core competencies of relyon plasma GmbH lie in developing, manufacturing and marketing innovative atmospheric plasma technologies for industrial and hygienic applications. The concern was founded in 2002 as a subsidiary company of the machine factory Reinhausen GmbH located in Regensburg in southern Germany. In 2004, under the name of Reinhausen Plasma, the company started selling atmospheric plasma solutions for pretreating and coating surfaces. On 1st July 2014, Dr. Stefan Nettesheim and Klaus Forster took over the concern following a management buyout (MBO).

The MBO underlines the confidence of the new management in the growing trans-sectoral market for atmospheric plasma applications. Nettesheim, CEO of the company since November 2011, explained: "With our development skills and our interdisciplinary team that knows the diverse possibilities of practice-orientated plasma applications, we're convinced that we can influence the market more strongly than in the past". Klaus Forster, COO in charge of organizational development and procurement, added: "We have extensive industrial experience in medical technology, automotive, packaging, electronics, aerospace and various other industries as well as in research and laboratory fields; this enables us to supply an adapted, demand-orientated spectrum of modular components for surface pretreatment, such as for activating and precision cleaning a wide range of materials, and also for the purposes of disinfection, tissue stimulation and odor neutralization in laboratory and medical areas". The components manufactured by relyon plasma cover not only



Dr. Stefan Nettesheim and Klaus Forster took over Reinhausen Plasma GmbH subsequent to a management buyout on 1st July 2014. Since 1st October, the company has been operating under the name of relyon plasma GmbH.

fully-automated but manual applications as well.

The company has also set the course for international growth. To do this, sales and service networks have been set up with experienced partners in France, Asia and the USA.

relyon plasma GmbH D 93057 Regensburg

Nürnberg once again the world's biggest gathering of the powder and bulk solids community



- 15,235 trade visitors travelled from 78 countries
- High-tech "live" from 930 exhibitors from 30 countries
- Starting 2016: TechnoPharm merges with POWTECH

Nürnberg was host to the world again from 30 September to 2 October 2014, when specific solutions for handling powder and granules and current pharmaceutical production issues were discussed at POWTECH and TechnoPharm. Over one-third of the exhibitors and visitors came from abroad. With altogether 930 exhibitors from 30 countries and 15,235 trade visitors, this is the world's largest and most important event for new trends in processing and handling bulk solids and for innovative technologies for the manufacture of solid and liquid drugs.

19th - 21st April 2016: POWTECH, TechnoPharm, PARTEC, Nuremberg (D)

"We have experienced three successful days of exhibiting," sums up Willy Viethen, Director Exhibitions POWTECH and TechnoPharm at NürnbergMesse. "Nowhere else in the world is such a comprehensive but compact overview of powder technology to be found. So for process engineers from many industries Nürnberg is the undisputed number 1 among the powder and bulk solids events."

The mood in the exhibition halls was exceptionally good. The exhibitors were very pleased with the great interest shown by the visitors from abroad – they accounted for more than a third of all visitors (35 per cent) and travelled to Nürnberg from 78 countries and six continents. Nine out of ten visitors came from Europe (including Russia, the Ukraine, Belarus and Turkey). The top visiting countries after Germany included Austria, Switzerland, Italy, the Czech Republic and the Netherlands.

The two trade fairs are firmly established in all European industries. An analysis shows a very balanced distribution of visitors to sectors: Almost every fourth visitor comes from the chemical industry, closely followed by the pharmaceutical industry and the plant and machinery manufacturers (approx. 20 per cent each). The fourth position is shared by the food industry and mineral source materials processing and handling (approx. ten per cent each).

POWTECH: the mecca for powder and bulk solids experts

The bulk solids community meets at its world-leading exhibition in Nürnberg every 18 months. This year's POWTECH also offered a 360-degree view of current processing, analysis and handling of powder and

bulk solids from all over the world. 711 exhibitors from 28 countries presented cutting-edge mixers, mills & co. this year. Over 3,500 machines and plants could be experienced live and in action on the stands. According to their own information, three out of four exhibitors showed a new or improved product on their stand.

The exhibitors particularly emphasize that the experts they meet at POWTECH are excellently informed about bulk solids technology. Dr. Stephan Röthele, Managing Partner at Sympatec, which celebrates its 30th anniversary this year and has exhibited at POWTECH for just as long, summarizes: "This trade fair with its focus on powder technology is the best event in Germany for us. The visitors have become increasingly international over the past years and especially the quality of the visitors on our stand has continuously improved."

Jasmin Frei, Process Engineer at Bühler, agrees with him: "We particularly appreciated the creative, informative and highly professional exchange of views with business partners from a wide range of sectors at this year's event."

The exhibitors also very much appreciate the cross-sector concept of the trade fair. "Our firm operates in over 300 application areas, so POWTECH's cross-sector orientation makes it the perfect platform for us," reports Hans-Jörg Walter, Sales Director at Maschinenfabrik Gustav Eirich.

Broad spectrum of products for the pharmaceutical industry in Nürnberg

This year's exhibitions once again made it very clear how broad-based the pharmaceutical sector is presented in Nürnberg. This year the 219 TechnoPharm exhibitors from 16 countries and more than half the 711 exhibitors at POWTECH offered solutions relevant to pharmaceuticals and showed that they can meet the high demands of the pharmaceutical manufacturers. A variety of techno-

logies for containment production of highly active ingredients as well as many single-use components were presented. The spectrum of products for single use not only included hoses and valves, but complete pumps too. Technologies for standard in-process controls are also increasingly offered for improving product quality.

Eight out of ten exhibitors at POWTECH and TechnoPharm were satisfied to very satisfied with the professional quality of the visitors. Just as many are planning to be there again in 2016. There are high expectations of the next event. Bernd Haidt, Sales Director Germany at GEMÜ: "We've not missed a single POWTECH or TechnoPharm so far. We hope the integration of TechnoPharm into POWTECH will help us to reach even more qualified visitors from the pharmaceutical sector – and perhaps gain more customers."

Starting 2016: TechnoPharm will be integrated into POWTECH

TechnoPharm will be integrated into POWTECH at the next event, which takes place in Nürnberg from 19-21 April 2016.

"More than half the POWTECH exhibitors offer solutions relevant to pharmaceuticals. There were also many firms at TechnoPharm that do not produce exclusively for the pharmaceutical industry. With the integration we are meeting a longstanding request of the exhibitors and visitors to no longer physically separate the two exhibitions," says Willy Viethen, justifying the decision. The entire pharmaceutical process chain for solid, semi-solid and liquid drugs will still be reflected in Nürnberg and promoted with the existing claim "Pharma.Manufacturing. Excellence". This also has the advantage that the visitors can find their way around better. Exhibitors concentrating on pharmaceutical products can present them more easily to the visiting international professionals from the other application areas. Pharmaceutical is one of six industry clusters explicitly pro-

Nürnberg once again the world's biggest gathering of the powder and bulk solids community

moted for POWTECH by the organizer NürnbergMesse. The other clusters are chemistry, processing, pit & quarry, ceramic & glass and food & feed.

The Arbeitsgemeinschaft für Pharmazeutische Verfahrenstechnik (APV – International Association for Pharmaceutical Technology) and VDI-Gesellschaft Verfahrenstechnik und Chemieingenieurwesen (VDI-GVC – Association of German Engineers – Association of Process and Chemical Engineering) will support POWTECH as honorary sponsors in the future. Prof. Jörg Breitreutz, President of APV, welcomes the new exhibition concept: “In future pharma will be at the centre of activity and not just

present. The exhibition in Nürnberg will continue to be a top-quality and specialist platform for experts from the pharmaceutical industry to meet and discuss the latest issues. APV as honorary sponsor will make a major contribution to this.”

“Exhibitors and visitors profit from the integration,” says Dr. Ljuba Woppowa, General Manager of VDI-GVC. “Nowhere else in the world can process engineers obtain such a breadth and depth of information on processing and handling powder and bulk solids – and all in one place. The focus on pharma adds a totally new dimension to the 360-degree view that visitors get in Nürnberg.”

Powder & Bulk Network: network globally, meet locally

POWTECH is part of a worldwide alliance of international exhibitions and conferences on processing technology and bulk solids handling. The Powder & Bulk Network as it is called covers all the industry's major world markets – Europe, Brazil, India and China – and so creates a specialist, high-quality platform for entering new local powder & bulk markets. More information at: www.powderbulknetwork.com

NürnbergMesse GmbH
D 90471 Nürnberg

International PackTech India and drink technology India Set Outstanding Visitor Record

Increase of 37 Percent



The trade fair duo International PackTech India and drink technology India were extremely successful with a visitor increase of 37 percent. From 25 to 27 September, around 10,250 trade visitors came to the Bombay Convention & Exhibition Centre to obtain information about solutions for the international packaging, package printing, processing, beverage and food industries.

28th - 30th April 2016: PackTech India and drink technology India, Mumbai (India)

International PackTech India and drink technology India already took place for the third time together under one roof. A total of 230 exhibitors presented their products on the three trade fair days, this represented an increase in the number of exhibitors and in the occupied net area. The area of food processing was represented at both trade fairs for the first time and is to be expanded further in the future.

The trade fair duo again confirmed its reputation as a business platform that provides customised solutions for the Indian market. A striking feature this time was that the stand presentations of the exhibitors were in part substantially more extravagant than in the past years. The picture on the trade fair grounds was characterised by intensive technical discussions at trade fair stands with lots of visitors on the three days of International PackTech India and drink technology India.

The organisers, Messe Düsseldorf and its Indian subsidiary for International PackTech India as well as Messe München International and its subsidiary MMI India for drink

technology India, also drew a most positive balance. „We have achieved a completely new level with this result,“ declared Dr. Reinhard Pfeiffer, Deputy Chief Executive Officer of Messe München International. „Following three joint events, drink technology India and International PackTech India have finally become established in the India market.“ Werner M. Dornscheidt, Chief Executive Officer of Messe Düsseldorf, underlined: „Companies meet well prepared customers here who are ready to invest. Exhibiting companies reported very concrete business negotiations. The visitors put up with long travel distances in part to experience new technologies of international and domestic suppliers live at this trade fair. The very positive result of the trade fair duo makes us optimistic for the future.“

For the conceptual sponsor of International PackTech India and drink technology India, the professional association Food Processing and Packaging Machinery in the German Engineering Federation (VDMA), its Managing Director Richard Clemens stated: „Our expectations with respect to the number of visitors and competence have been considerably exceeded. You sense a very positive mood with corresponding investment projects. Both trade fairs have become the optimum platform for the industry, and the many high-quality contacts promise

good trade fair follow-up business.“ The Indian branch of VDMA, VDMA India, provided valuable support in moderating the round table talks and the exhibitor forums.

There were also a lot of visitors at events of the supporting programme as at the stand presentations of the exhibitors. The Round Table Talk, held for the first time within the context of drink technology India, especially generated a lot of interest. Renowned representatives of the international beverage and food industry discussed the topic „Outlook for Beverages and Food in India 2020.“ Topics such as hygiene, safety and waste management were focal points of the panel discussion, topics with which the Indian industry is increasingly dealing. The rows of seats in the exhibitor forum of drink technology India were also filled to the last seat. Exhibitors presented their product solutions dealing with all subject areas of „Beverage“ and „Food“.

The next International PackTech India and drink technology India and is expected to take place from April 28 to 30, 2016, again in the Bombay Convention & Exhibition Centre in Mumbai.

Messe Düsseldorf GmbH
D 40001 Düsseldorf

Chillventa 2014 sets new records



Chillventa continues to set records and has improved all its exhibition parameters. "For the first time Chillventa has topped 30,000 trade visitors, an increase of 7 % compared with the exhibition in 2012, and attracted 984 exhibitors – 70 more than two years ago. These figures show the great commitment and confidence of Chillventa's visitors and exhibitors. It is the key gathering of the national and international market players in the refrigeration, air conditioning, ventilation and heat pump segments," says Richard Krowoza, Member of the Management Board at NürnbergMesse.

11th - 13th October 2016: Chillventa 2016, Nuremberg (D)

The large international involvement at Chillventa was again particularly impressive. 56 % of the visitors and 67 % of the exhibitors come from abroad. More than 30,000 visitors represent over 110 countries throughout the world.

"Chillventa achieved these records despite the rail strike by the Gewerkschaft der

Lokführer (GDL – Locomotive Drivers Trade Union) on the second day and the attendance from Germany also grew appreciably. However, just as important as the quantitative data is the quality of the visiting professionals. The exhibiting companies expressed their appreciation of the professional concentration and the high degree of decision-making authority," says Alexander Stein, Director Exhibitions Chillventa at Nürnberg-Messe.

Chillventa's basic theme of "Chillven-

ta Connecting Experts" is not only actively presented at the exhibition, but also in the supporting programme. The successful Chillventa Congressing took place the day before the exhibition under the direction of the expert, Dr. Rainer Jakobs. The 250 international participants were offered a top-class programme.

Guided tours for specific target groups, tours and several special presentations provided comprehensive and targeted information for many visitors.

A special highlight on the last day of the exhibition was the visit by Konny Reimann, TV emigrant and refrigeration and air conditioning fitter. Visitors and companies could get to know the pleasant new Texan and test his specialist knowledge at a talk show and autograph session.

The next Chillventa takes place in the Exhibition Centre Nuremberg from 11-13 October 2016.

NürnbergMesse GmbH
D 90471 Nürnberg

Closed system for high operator protection

Bosch introduces CIP system specifically for use with human vaccines

At TechnoPharm 2014, Bosch Packaging Technology, a leading supplier of process and packaging technology, presented the special version of a CIP (Cleaning in Place) system. "The exhibited system serves for cleaning and wastewater inactivation of various process systems used in the production of human vaccines," explained project manager Volker Kempf. "It meets the highest safety requirements. In addition, it is easy to transport, quick to set up, and easy to handle." The CIP system is manufactured by Pharmatec, a subsidiary of Bosch Packaging Technology.

The development of human vaccines comprises three successive process steps: preparation, purification, and formulation. During the first phase, eggs are inoculated with virus-containing material for selective replication of viruses in the laboratory. To separate the viruses, the egg-based preparation is purified in several steps by means of filtration and addition of buffer solutions. The CIP system from Bosch is used for cleaning the pharmaceutical purification equipment, which ranges from the harvesting system to a variety of filtration and separation systems to the process tank with finished active substance concentrate, and at the same time thermally inactivates the wastewater.



CIP System from Bosch for human vaccines: The CIP system with a compact skid design is suited for the cleaning and waste water inactivation of process equipment for the production of human vaccines.

Operator safety is the highest priority

Handling of live viruses poses a threat to the staff and requires high equipment security measures. Consequently, the CIP system and all system modules are designed according to biosafety level 3 (BSL 3). To keep viruses from escaping to the outside, Bosch has designed a completely closed system

with fixed piping and a hermetic CIP pressure vessel. The pumps for supply and return of rinsing media are equipped with double mechanical seals and sealing liquid (pure steam condensate) in the space between the seals, ensuring that no contaminated cleaning media escapes into the environment.

Easy operation with the touch panel

The system in compact skid design provides essential advantages to the user: Due to its modular construction, it can be transported easily, as well as set up and connected to the media supply of the building quickly. If production is moved to another location, the system can be reinstalled at the new site without difficulty. The touch control panel with a user-friendly menu enables simple parameterization of the cleaning program. All components and parts coming in contact with the media are made of stainless steel and fitted with a high-quality surface. Hence the system can clean itself without residue between applications, and can be sanitized with water for injection (WFI) at a temperature of 125 degrees Celsius.

As a satellite system, the CIP system is designed for cleaning of various process systems on a rotating basis, as well as for cleaning of tubing or loops. With a volume of 800 liters, the CIP tank has the necessary size to clean process tanks with a useable volume of approximately 2000 liters. Sodium hydroxide, which is prepared in a separate tank, is used as the cleaning medium.

Bosch Packaging Technology D 74554 Crailsheim

AAF introduces the AstroCel® I HTP high temperature HEPA filter for dry heat sterilization processes



- New filter design that answers to the challenges identified by the pharmaceutical industry
- Demonstrated high durability of construction and proven performance on efficiency
- Exclusive webinar and new whitepaper available via www.hthepa.aafeurope.com
- Launched at TechnoPharm 2014

On the first day of TechnoPharm 2014 in Nuremberg (Germany), AAF has launched the AstroCel® I HTP high temperature HEPA filter. The air filter is specifically developed to safeguard a flawless performance of sensitive dry heat sterilization processes during pharmaceutical sterile manufacturing. With a high durability of construction and proven performance on efficiency, the AstroCel I HTP resolves key air filtration challenges identified by the pharmaceutical industry. An exclusive webinar can be viewed, during which critical success factors for dry heat sterilization processes are discussed and the proven performance of the new filter design is presented.

Critical process step in sterile manufacturing

Dry heat sterilization can be considered one of the most critical process steps in medicine manufacturing, by which to ensure sterility of pharmaceutical sterile and aseptic preparations. Inside such sterilization tunnels, HEPA filtration plays an indispensable role in protecting containers, such as vials or syringes, from contamination that might result in severe health risk for patients. Where the installed HEPA filter has to withstand frequent temperature fluctuations between ambient and up to 350 °C, operating conditions are challenging.

To control the challenges, and therewith not to affect manufacturing throughput and product quality and safety, a careful selection of the high temperature HEPA filter is required. Based on detailed customer insights, AAF was able to identify the critical characteristic requirements for high temperature HEPA filters which directly influence the productivity of a sterilization tunnel. Dr.-Ing. Marc Schmidt, Business Development Manager Pharma at AAF International: "We conducted many in-depth interviews with tunnel and medicine manufacturers over the last year. They have given us a perfect understanding of how HEPA filtration can optimize high temperature processes. Two HEPA filter requirements, being high durability of construction and proven performance on efficiency, were found most critical and the AstroCel I HTP has proven to provide the right answer to both."

A new filter design for unsurpassed performance

The new AstroCel I HTP high temperature HEPA filter from AAF comes with corrugated stainless steel separators and stainless steel support bars and stays. This design gives a high overall durability, which is less prone to oxidation. Risk of oxidized particles to shed off the separators on the air leaving side is reduced. The separators are placed in staggered position to increase media pack stiffness and to prevent separators from nesting.

In addition to stainless steel separators and stiffeners, the new filter design includes an elastic fibreglass sealant in contrast to the more vulnerable ceramic sealant, such as found in traditional air filter types. With the inclusion of an elastic fibreglass sealant, the HEPA filter is better able to compensate the forces from heat stretching of components. Integrity breaches from stress cracks are prevented, by which risk of bypass, particle shedding and process contamination is mitigated.

AstroCel I HTP provides a high air quality level at temperatures of 350 °C with an efficiency of $\geq 99,99\%$ for $0,3 \mu\text{m}$ particles and $\geq 99,95\%$ for MPPS. The air filter can be operated at a high airflow rate of 1440 m³/h in 150 mm depth execution and 2100 m³/h in 290 mm depth execution. This allows for a speedy temperature control,



Product photo AstroCel I HTP

through which time for heating up can be significantly reduced. With AstroCel I HTP, operational readiness is improved and cycle times of batch processes are shortened. The high durability of construction limits risk of process downtime, while the low operating resistance of $\leq 250 \text{ Pa}$ gives reduced energy costs.

The AstroCel I HTP is compatible with equipment of market leading sterilization tunnel manufacturers.

A dedicated webinar and whitepaper for detailed insights

AAF has just released a new webinar during which the critical success factors for dry heat sterilization processes are discussed. Subsequently, the proven performance of the new filter design of the AstroCel I HTP is presented. The webinar is presented by AAF's Business Development Manager Pharma, Dr.-Ing. Marc Schmidt. Special webinar guest is the well-respected GMP and cleanroom expert Dr.-Ing. Lothar Gail, who shares the insights that he obtained from his many years of experience in the field of contamination control and cleanroom design.

Exclusively for the webinar viewers, AAF will distribute a digital copy of a new whitepaper that contains detailed insights into high temperature HEPA filtration for dry heat sterilization tunnels. The registration for the webinar and the download of a preview of the whitepaper can be done via: www.hthepa.aafeurope.com.

AAF-Lufttechnik GmbH D 46047 Oberhausen

Spang & Brands is a one-stop supplier of medical devices and precision parts – from development up to ready-to-use packed products. During COMPAMED, the company shows numerous different medical device solutions for specific application cases on Stand M 33 in Hall 8 A – also in 2-component technology: syringes, cannulae, pierceable membranes, implants, minimal-invasive surgery components, infusion and blood bag sets, transfusion and connection systems, as well as assembled sets and ready-for-sale systems such as mixing and dosing systems for bone cement. As a particular highlight among the Spang & Brands exhibits is a pencil point spinal needle. The company produces the plastic components of this spinal anaesthetics instrument for temena Group.

Spang & Brands shows pencil point spinal needle with integrated magnifying glass function

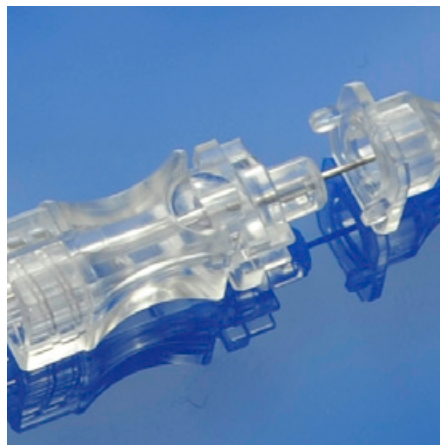


**12th - 14th November 2014:
COMPAMED 2014, Duesseldorf (D)**

How can an anaesthetist be sure a needle is precisely positioned before he can apply spinal anaesthesia? By means of a magnifying glass integrated in the spinal needle's hub, he can immediately detect slightly turbid cerebrospinal fluid. Spang & Brands has developed this control function of the needle in close cooperation with experts at temena Group. This was not, however, the only design feature that the high gloss polished chrome-nickel steel cavities of the injection moulding tool had to tackle.

The pronounced tactile surface plastic parts required for secure guidance of the "introducer" pre-injection cannula, spinal needle and stylet hubs must comply with very tight micro region tolerances. In addition, pointed star-shaped guidance sleeves are moulded into the interiors of the hubs. They ensure that neither misalignment nor other faulty needle/hub positions occur during adhesive assembly of the medical-quality steel needles, which have diameters of 0.33mm to 0.70mm and lengths of 90mm to 150mm. Axial and sliding precision of the four parts with each other is a particular plastics processing challenge. An Anti-Luer connector on the cannula hub prevents mistakes when using anaesthetic syringes. The stylet hub is also fixed exactly by means of a "tongue" in the injection moulded polycarbonate hub. This prevents the stylet from falling out of the needle, even in a vertical position. The stylet hubs are injection moulded in different transparent colours in order to clearly differentiate between different pencil point spinal needles. This colour coding requires use of special UV-transparent PC colour masterbatches to ensure curing of the adhesive used to join metal and plastic.

After several years of development, technical evaluation, validation to international standards and introduction in hospitals, this high-ranking product has meanwhile been in production at Spang & Brands already for quite a while. High precision production of the

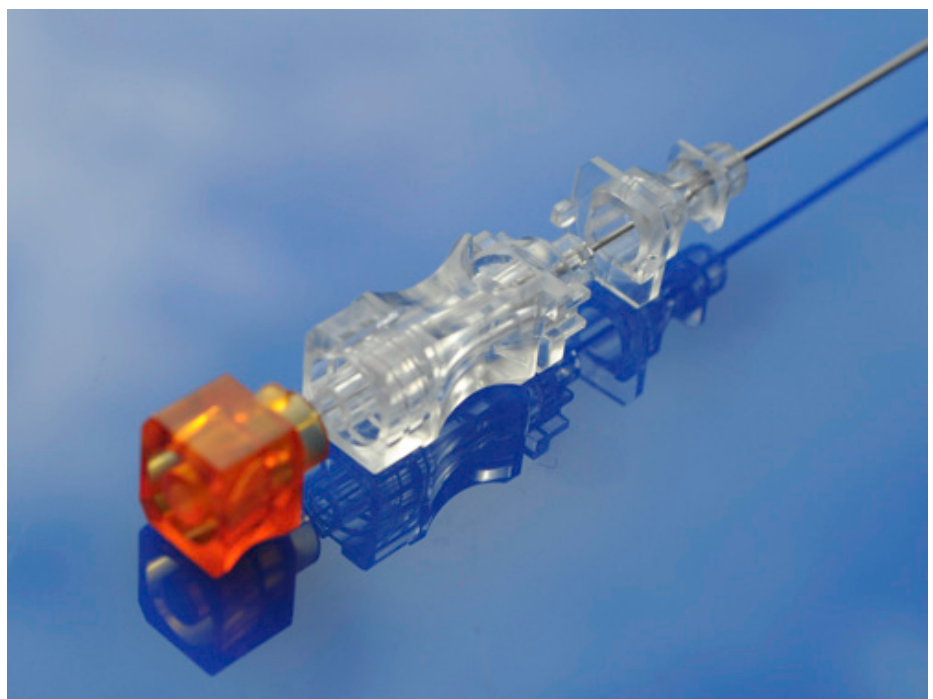


temena's pencil point spinal needle with magnifying glass function

individual plastic components focusses on compliance with tight 2/100mm tolerances. Systematic precision control is the order of the day, not to the least with the cannula hub's interior bore, which may not exceed a 2/100mm tolerance limit, in order to take in the maximum 0.33mm diameter needle pre-

cisely and with absolute axial straightness. "The required 2/100mm precision is part of our day-to-day business. We have been specialised for around 30 years with continuous growth in engineering knowledge in precision and cleanroom injection moulding for the medical and pharmaceutical industries", states Friedrich Echterdiek, Managing Director of Spang & Brands GmbH, "in particular for special customer projects, we have the right solution approaches supported by CAD-3D development, MoldFlow analysis, highly modern mouldmaking and over 60 all-electric and hydraulic drive injection moulding machines". Fully automatic and manual assembly as well as packing parts and sets of components take place in different class cleanrooms – as pre-series or lots delivered just-in-time, from small series up to requirements in millions. Strategically located test stations are equipped with 3D measurement, and both optical as well as tactile controls support quality assurance.

Spang & Brands GmbH D 61381 Friedrichsdorf



temena's pencil point spinal needle with magnifying glass function

MULTIVAC auf der COMPAMED 2014



Packaging solutions for a flexible, reliable and hygienic packaging procedure

In Hall 08a (H01) at COMPAMED, which takes place in Düsseldorf from 12 to 14 November, MULTIVAC will be showing solutions for the automated and GMP-compliant packaging of sterile products and other medical items. The strength of the company is based on more than 40 years of worldwide experience and cooperation with the medical sector.

**12th - 14th November 2014:
COMPAMED 2014, Duesseldorf (D)**

“Each of our packaging solutions is individually designed to the requirements of our customers and to the products to be packed”, emphasizes Valeska Haux, Senior Director of Corporate Marketing at MULTIVAC. The result is a comprehensive packaging system, which not only packs perfectly but also contributes to a flexible, reliable and hygienic packaging procedure.

Thermoforming packaging machine in the MULTIVAC Clean Design™: GMP-compliant down to the last detail

From a high-speed line for more than 80,000 syringe needles per hour to a flexible packaging system with a program-controlled format change for small batches: MULTIVAC has the right thermoforming packaging machine for every requirement. At COMPAMED the machine builder from Southern Germany will be showing a GMP-compliant thermoforming packaging machine in the MULTIVAC Clean Design™. This machine concept takes into consideration aspects such as process reliability, ease of cleaning, cleanroom compatibility and compliance with cleanliness. In the interests of reliable line clear-ance, the area for product processing is strictly separated from the area of the machine equipment. Transparent enclosures with large doors protect against environmental influences and, thanks to perfect overview of the process, they increase the security of the packaging procedure against any products being lost.

R 085: cost-effective, entry-level model for running flexible films

The R 085 thermoforming packaging machine, which is equipped with the P 20 stamp printer for applying product information, is ideally suited to entry-level companies or small batches. With its thermoforming



depth of up to 80 millimetres, the R 085 offers a whole range of possibilities for pack design in the production of both vacuum and MAP packs. Thanks to its quick-change system with proven slide-in technology for forming and sealing dies, which is integrated in the machine as standard, it is particularly easy to convert the machine to other pack formats. Electric drives are used for the lifting units as well as the transport chain.

The semi-automatic T 260 traysealer is similarly designed for small batches, and this machine can be adjusted seamlessly, which ensures an exceptionally precise packaging procedure. It gives a complete overview of the entire process as well as traceability of the individual process stages during packing.

C 200TC and C 300TC: packaging in film pouches with validation and calibration

In the sector of vacuum chamber machines, MULTIVAC will be showing its two latest entry-level models in the cleanroom-compatible TC series, the C 200TC and C 300TC. The suffix “TC” stands for thermo-

controlled, i.e. the sealing bars are permanently heated and therefore offer a high degree of process reliability and reproducibility.

LD 100 and LD 110 label dispensers: adaptable and particularly accurate

MULTIVAC Marking & Inspection will be presenting its new LD 100 and LD 110 label dispensers, which can operate with thermal transfer, inkjet and hot foil printers. The units are modular in construction and therefore perfectly suited to a wide range of labelling tasks. The LD 100 can reach a speed of 60 m/min, the LD 110 achieves 120 m/min. The label backing strip width extends from 100 to 300 millimetres. Both versions have an innovative, integrated solution for end-of-reel detection and early warning. The MULTIVAC conveyor belt labellers were the first series to be equipped with the new label dispensers.

MULTIVAC Sepp Haggenmüller GmbH & Co. KG
D 87787 Wolfertschwenden

Optimised contamination safeguards and improved comfort

CleanVision – the innovative one-piece clean room suit with integrated visor



With CleanVision, Initial Cleanrooms has developed an innovative one-piece clean room suit for use in the pharmaceutical

industry. The unique jumpsuit with integrated hood and replaceable visor will be on the market from summer 2014. Unlike conventional solutions, the suit is virtually sealed, significantly reducing the risk of contamination in clean rooms. Safety is also boosted by the low number of contact points with the outside of the suit. CleanVision can be supplied in sterile packing and specially folded so that only the inside of the one-piece suit is handled when dressing. This not only improves contamination safeguards, but also makes the dressing process much simpler. The continuous zip on the inside legs allows the wearer to keep both feet on the ground when putting on and taking off the suit, lowering the amount of contact required. It is demonstrably quicker to put on than previous clean room suits (by more than two minutes) because only the shoes and gloves must be donned separately.

CleanVision combines the greatest possible cleanliness with maximum comfort. The jumpsuit with integrated visor replaces the outdated clean room glasses worn with conventional suits. The adjustable hood offers a wide field of vision and enables users to wear glasses. The replaceable and disposable visor



ensures optimal vision at all times when working in clean rooms. “Together with expert partners, we have invested almost three years in developing the patented clean room suit and will use CleanVision to expand our position as a market and technological leader”, explains Nicola Cassanelli, General Manager at Initial Cleanrooms Europe. Initial Cleanrooms offers a leasing service for the innovative clean room suit, allowing customers to avoid high investment costs and write off the leasing rates over a three-year period. The clothing concept will be tailored to each customer individually. If required, CleanVision can be delivered straight to the changing room in suitable clean room packaging (airtight or vacuum-packed). The clean room suit is available in white and light blue as standard.

Initial Textil Service GmbH & Co. KG
D 50739 Köln



DENSO Robotics presented the new VS H2O2/UV 6-axis robot at the Motek 2014 / Round forms, the absence of external visible screws and a washable and resistant surface make the robot the first choice for medical, pharmaceutical, electronics and food industries.

Special Surface Protects New DENSO Robot from Bacteria Contamination

The new robot VS H2O2/UV was in the centre of the presentation of DENSO robotics, worldwide market leader for compact robots, at the Motek 2014 in Stuttgart, Germany. The state-of-the-art robot offers a special surface that is resistant against sterilization methods with H2O2 and UV light. The robot includes a completely internal wiring that goes up to the robot's 6th axis. It also features an innovative design with soft and round forms, so no residue and dirt can accumulate on the robot. The VS H2O2/UV is the perfect solution for the medical, pharmaceutical, electronics and food industries, which all require high standards of hygiene and sterility. DENSO Robotics presented the new robot in hall 7 at booth 7108 at the Stuttgart trade fair from 6-9 October 2014. In addition, DENSO showcased the EYEFEEDER®, a feeding system consisting of a camera and a robot operated via a RC8 controller. This application illustrates the flexible interaction of controller, robot, and peripheral devices and demonstrates how easy it is to integrate robots into a production line.

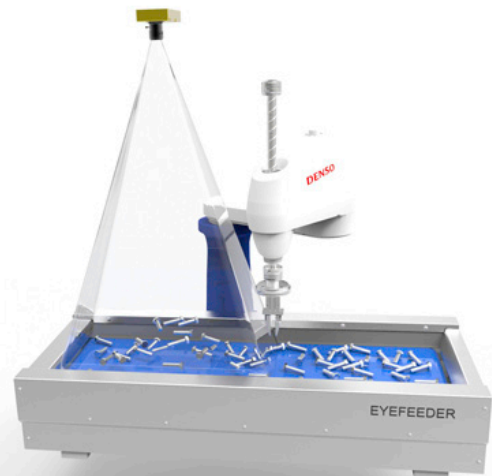
"The VS H2O2/UV is ideal for customers with applications such as sorting, portioning, processing and packing", Jürgen Küch, Senior Manager Europe at DENSO Robotics, explained. "The number of pre-orders for the robots demonstrates that our customers from the pharmaceutical, medical and food industries have great confidence in our products and services. They have literally been waiting for DENSO launching a robot like the VS H2O2/UV." Clean room environments are allowed only to contain a minimum of dust, suspended particulates, and chemical vapours. Companies in these industries have to operate based on strict regulations about hygiene and sterility. Companies often use hydrogen peroxide H2O2 and ultraviolet light to kill germs and bacteria. "Not every robot is suitable for such demanding working environment", Küch pointed out.

Growing demand for robots suitable for sterile environments

The robot is equipped with a shiny aluminium surface that ensures easy cleaning and makes it easy to spot dirt particles. The round design hinders the accumulation of bacteria in hard-to-reach or square surfaces. The absence of visible screws limits the settling of bacteria and dirt as well. Like the new VS Series, this robot features a complete internal wiring up to the end of the robot's arm (6th axis). This enables to connect grippers and other devices directly to the robot's flange using a so called "communication flange". This prevents tangling the wires with surrounding equipment or damaging them while cleaning the robot with strong chemicals. Connecting the robot at the bottom allows all cables to be sealed inside and keeps all bacteria out. Special optional features of the robot are also an external battery unit for the robot's motor encoders that can be placed outside the clean room environment, therefore preventing contamination, as well as the option of an external brake release unit for the robot's axes.

EYEFEEDER® regulates material input

The feeding system, EYEFEEDER®, was another highlight at the stand of DENSO Robotics. This solution consists of a part feeder, a camera system and a DENSO robot. The whole system is operated



Eyefeeder



New VS H2O2 Bottom Connector Cable



PR Flange

and controlled by the RC8 controller. The system works in the following way: Material is delivered by a bulk-material carrier. As soon as the products are put on the conveyor, they are moved towards the vision-system's recognition area. The vision system then decides the steps to follow: if the products are well positioned and ready for collection, it transmits the coordinates to the robot's controller, so that the robot can grab the products. If

the number of products is sufficient but they are out of place, the camera system reports that the products have to be tossed or turned in order for the robot to collect them. If there are enough products remaining, the camera system reports that new products have to be shifted into the vision-system's recognition area. The motors of the part feeder are powered directly by the RC8, which means no further console terminal is necessary.

"The EYEFEEDER® can be combined with different 4- and 6-axis DENSO robots, depending whether pick and place or assembly operations are necessary. This again underlines the flexibility of our products", Küch said. The conveyor's speed and joggling intensity are determined by the RC8 controller, which is connected to the EYEFEEDER® via an Ethernet connection to the ORiN Network. The RC8 is the smallest industrial robot control in the 3-kW-class. Altogether, the EYEFEEDER® is able to move parts of up to 250 mm and a maximum weight of up to 300g.

DENSO Robotics Europe D 64546 Mörfelden-Walldorf

Production line clean air solution launches to industry interest



A unique new product, set to minimise the costs associated with manufacturing to GMP air standards, has received great interest since its launch at a UK trade event.

The HEPA-lite was unveiled at Interplas earlier this month and generated a significant number of enquiries from firms seeking a cost-effective solution to preventing product contamination during manufacture.

Created by award-winning modular cleanroom specialist, Connect 2 Cleanrooms, HEPA-lite is a mobile, adjustable cleanroom unit which can be fitted at mission-critical elements of the manufacturing process line. It

provides localised filtered air to protect processes from contamination, without the need to enclose the entire machine set-up within a cleanroom environment.

Managing director of Connect 2 Cleanrooms, Joe Govier, said he was delighted at how HEPA-lite had been received.

“We designed the HEPA-lite in order to overcome a specific problem and the visitors to our stand at Interplas were able to identify with that issue and realise the unique benefits of our product,” he said.

“We wanted to help manufacturers to overcome the significant time and cost barriers associated with creating a Class 5-9 environment or ISO 14644-1 compliant production line, thereby creating opportunities to bid for a wider range of work.

“HEPA-lite can easily be fitted over mission-critical manufacturing processes to deliver the required air purity standards – removing the need for the entire production line to be contained within a cleanroom environment. The product can also help manufacturers gain greater competitive advantage through advanced process control.”

HEPA-lite has been through a strategic development process and is the result of solutions-focused research by Connect 2 Cleanrooms, which aims to create products that will solve real-life problems for customers.

The modular system is designed with the ultimate flexibility in mind. Low, braked castors and angle-adjustable legs make the



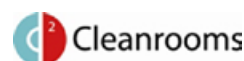
The HEPA-lite from Connect 2 Cleanrooms.

product easy to slide under machinery and the C-frame itself is built bespoke to requirements. Its minimal footprint makes it ideal for workspaces where space is at a premium.

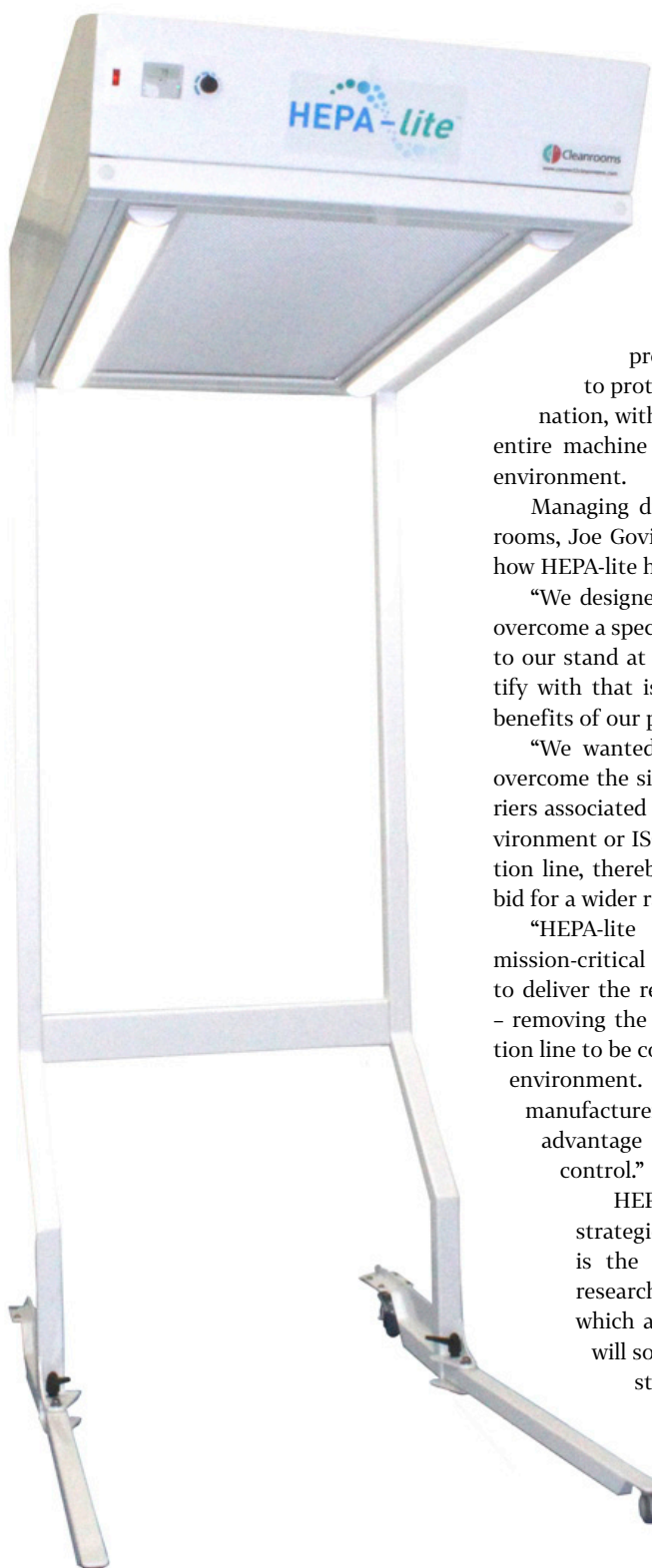
HEPA-lite is ideal for use on injection moulding machines, for example protecting the mould area, and can be adapted for use on conveyor systems and process and flow lines. It is expected to be particularly attractive to manufactures in healthcare, pharmaceutical and food sectors, for both product and packaging.

Being mobile, HEPA-lite is easy to maneuver, making it simple to perform cleaning, tool changes or to carry out maintenance on the machinery. The product features integrated LED lighting and a digital pressure differential transmitter with digital output. This enables the manufacturer to specify upper and lower thresholds for air pressure requirements and triggers an audible and visual warning alarm, should pressure vary outside these parameters.

HEPA-lite can also be customised to suit manufacturers' individual needs. Side panel options are available, with either a softwall curtain or clear acrylic hardwall, and the product can be supplied with the customer's branding.



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Moisture in Oil Measurement Made Easy

Hand-held Meter for Moisture Content of Industrial Oils

The new hand-held meter OILPORT 30 from E+E Elektronik accurately measures the water activity (aw) and temperature (T), and calculates the absolute water content x (ppm) of industrial oils. The user can store up to ten sets of oil specific parameters in the hand-held to be used for correct calculations of the water content in various oils.

The large touch screen display and intuitive navigation menu ensure comfortable operation of the OILPORT 30. With the data logging function, the measured values can be stored in the device and are available through the USB interface for further processing. The user can easily perform 1 or 2 point adjustments of aw and T, and use the OILPORT 30 as a reference for checking other measurement devices in the field.

The short oil probe with OILPORT 30 is ideal for measurements in oil samples, while in-line monitoring can be carried out with the pressure-tight probe (up to 20 bar/300 psi). Together with the optional ball valve, the pressure-tight oil probe can be installed

and removed without interruption of the oil flow.

The OILPORT 30 is delivered in a hard shell carrying case which accommodates the hand-held device, probe, an optional humidity calibration kit, and accessories.



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OILPORT 30 set in the hard shell carrying case. (Photo: E+E Elektronik)



OILPORT 30 hand-held meter with pressure tight probe and ball valve. (Photo: E+E Elektronik GmbH)

Vaisala's New Data Logger for Environmental Monitoring Features Simplified Calibration and Faster Validation

Vaisala introduces the newest addition to its line of data loggers for continuous monitoring - the Mid-Range (MR) logger. Staying true to the reliability of the Vaisala DL-series loggers used in GxP-regulated environments, the MR data loggers are designed for applications where speed and economy are critical, and regulatory scrutiny is less stringent. Combined with the Vaisala Continuous Monitoring System (CMS) the MR loggers allow users to create presentation-quality reports that are automatically exported to PDF and spreadsheets.

„We created this logger to provide an economical option for customers seeking the quality and reliability of a Vaisala device and the ease of use of the viewLinc software, but with simplified calibration and validation

on processes,“ said Senior Product Manager Jon Aldous. „These data loggers still have all the best features of our other loggers - continuous recording, dependable alarming, and easy reporting - but with accuracy appropriate to most industrial settings, rather than a very demanding environment, for example, a chamber that must be calibrated to ICH standards. Not all environments have the same regulatory focus, now we can offer a flexible solution that includes the same great hardware and software, but with precision that matches the application.“

Applications for the MR data logger range from drug discovery and early phase clinical trials, blood and tissue banks, hospitals and pharmacies, to semi-conductors and server rooms. With a calibrated measurement

range of -55 to 50°C (hence: „mid-range“), the MR loggers are available in six models, including single channel temperature, 2-channel temperature and contact input, 4-channel with temperature and contacts, or 2-channel temperature and humidity. Designed to be easily deployable out of the box, MR data loggers have two options for scaled-down, efficient validation: the Express IQOQ and Rapid IQOQ.

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