

PACO WORLD



Our International
Wire&Mesh Magazine
for Existing and
Prospective Customers

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Building the Future.

Dear Reader!

Whenever a company builds, that is always a good sign. Building indicates growth and the need to create space for additions to the workforce, production lines, service facilities and supporting IT systems. But as everybody that has ever been involved in a major building project knows, a time like this means more than just looking forward to when it is all finished.

This is all the more true when building activities and day-to-day business operations are directly next door to each other. For a number of months, the ongoing extension work has more or less turned our headquarters into the side office of a building site. Noise, dust and various makeshift solutions were frequently an integral part of our daily routine. That is all behind us now, we've at long last moved into our new rooms. All that remains is to express our thanks to everybody concerned for their patience and success in making sure that our customers were at no time ever affected by the additional stress experienced during this period at the PACO headquarters.

Everyone involved can now sit back and take a deep breath and – believe me – I've taken a far deeper breath than most. This is because the area that we have gained not only gives us extra space to add to our workforce. It has also enabled us to optimize the platform we use to closely co-operate with our customers. This means that we can improve organisational structures and intensify the communication within our teams. Something that has a positive effect on the motivation of everyone involved, for the benefit of all of our customers and business associates. After all, when we build for the future, we are building for our customers.

Best Regards

Peter Ruppel
Managing Director



PACO Screening Machine MAG 10: On the Road to Success with an Acceleration Record

How can you easily explain a technical quantum jump? Maybe with the example of a top sportsman such as Richard Fosbury, who introduced a completely new style of high jumping. Instead of using a straddle or scissors-jump technique to go across the bar forwards, he changed his approach and went backwards over the bar – since then the 'Fosbury Flop' has been used by countless other athletes to attain new world records. What has all of this got to do with PACO? Well, we knew that our screen cloths were more efficient than ever before. But there was not the matching screening machine technology. So why not do something ourselves to realize the full potential of our cloths. After all we are already experienced machine builders and have very good connections to a network of specialists that work closely together with us. These developments and considerations have given birth to the PACO MAG 10 screening machine that is unique as far as performance and problem solving capabilities are concerned, even with the most difficult to screen products.

From test series to series production
In PACO WORLD no. 13 we reported about a screening machine that we had built that was the first of its kind in the world – the PACO MAG 10. Back then, approximately 18 months ago, we shipped the first example after a lengthy internal planning, preparation and test phase. It has subsequently been introduced to the global market as the most powerful screening machine that has ever been built – and that will be avail-

able to buy in the foreseeable future. As can be expected, we have already secured the necessary patents. And the know-how that is needed to build high performance screening machines is something that nobody can take away from us. All of this means that it was a logical development to quickly put the MAG 10 into series production on the basis of firm orders and options from a wide variety of branches around the world.

Separating the hitherto almost inseparable

Screening maybe a technology that is very old and well established, but it is also very ingenious. Making sure that something "slips through the net" to separate the useful from the waste, to turn disarray into orderliness, to create or save values or, at the end of the day, to find better solutions to age-old problems is one of the primary objectives of the "Homo Technicus" and of screening. But these days, there is a lot more needed than just being able to effectively separate dry products. The success behind the PACO MAG 10 is that it satisfies the considerable demand for a solution that effectively and precisely screens particles that stick very strongly to each other such as slurry, oily conglomerates or clumps – if necessary down to a particle size of only a few thousandth of a millimetre. The PACO MAG 10, with its groundbreaking synergy of extreme power, unparalleled sturdiness and extreme precision, sets completely new standards. This provides innovative screening options for a wide range of industries and applications.

The PACO MAG 10 is a screening machine that, without exaggerating, sets new standards. Depending on requirements, it and its screens can take up to 14 g – a world record!

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Certification through EADS PACO Quality is "Out of this World"

Of all industries, the highest demands on supplier quality management systems have to be those of the aerospace industry. At the very forefront of this industry in Europe is EADS Astrium, who are responsible for the production and supply of the Ariane 5 launch vehicle. This company, that also plays a major part in the European contribution to the International Space Station (ISS) and the Columbus science laboratory, only works together with specially selected suppliers. These have to be certified to the Assessment Standard EN 9100 in accordance with the quality demands determined by ASD EASE-rules and policies. PACO has passed this demanding testing procedure and has been confirmed as a qualified high tech supplier for the aerospace industry.

Core competence:

absolutely reliable operation

EADS Astrium is a customer, whose business activities are out of this world in the truest sense of the meaning. Not only does this subsidiary of the European Aeronautic Defence and Space

Company supply fully integrated and completely checked launch vehicles to Arianespace. EADS Astrium is also responsible for the production of all of the propellant stages of the Ariane 5. It is for this area that PACO produces very special parts – filter components for



The component produced by PACO for the Gas Retention Device (GDS) in the fuel tanks of the third Ariane 5 stage has already proved itself in space a number of times – thanks to perfect quality management.

the fuel tank of the upper stage of the Ariane that have to operate completely fault free in zero gravity (for more information, see PACO World No. 8/2004).

EADS Astrium activities include a number of other spectacular projects. These range from contributions to the International Space Station (ISS) and its science laboratory Columbus as well as the unmanned supply vehicle ATV through heat shield systems for various European planetary research missions to the development and production of satellite systems such as ASTRA or Galileo. Regardless of how different the Astrium products and services are from each other, they all have one thing in common: the need for absolute dependability and reliability. A rocket, a satellite or a space freighter that develops some kind of fault is hopelessly lost – and at the same time several million Euros. That is why the extremely high standards that EADS Astrium sets for itself and its suppliers are fully understandable.

Top Quality Management for all PACO customers

For PACO, every customer is important. But as they are all different, there is a lot for us to learn from each one of them. For instance, to work together with EADS Astrium we had to adapt our quality management to an extremely high level that ensures that the stringent requirements of the aerospace industry can be continuously maintained. And the same is true for all of our other customers: we tailor our quality management processes so that they exactly fulfil each customer's individual needs – from the motor indus-

try through polymer chemistry and energy extraction to foodstuff production and solar technology. This means that quality management standards such as ISO 9001:2001 or ISO 9100, to which we are fully certified, simply provide the framework which we fill with customer-specific measures and processes. In the case of ISO 9100, the organisation-specific demands of our customers often go far further than the requirements determined in the standard.

100% control and more

EADS Astrium handed the responsibility for the certification of the quality management assessment according to EN 9100 to the corporate auditor ADS EASE (European Aerospace Supplier Evaluation): first class certification, in other words. The PACO quality management team prepared for a period of more than four months for the assessment audit. The lead auditor of the ADS EASE spent two days at PACO and went through the complete quality management process step-by-step – taking in turn every department involved. They took a particularly close look at specialist requirements as well as certain items that had to be specifically checked. One of these was the EADS quarantine store in which materials, such as metal wires, that are exclusively required for this customer are stored. Other boxes to be ticked on the test report that went above and beyond the requirements of ISO 9001 were documentation standards, control of documents and configuration management. Another special requirement was the 100% check of the parts and materials that are to be used – from metal wire cloths through to sheet metal and sealing elements. All measures and the complete procedure are documented in process instructions, manufacturing instructions and checking instructions. Another central part of the assessment was "procurement". Again this is regulated in detail which requires a very close working relationship with all of the suppliers involved.

Finally, two very strenuous and demanding audit days came to a successful end. PACO passed the ASD EASE Assessment according to EN 9100 with a very good score of 94.5%.

PACO Screening Machine MAG 10

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The bottom line: gravitational acceleration plus cloth quality

The breakthrough to new dimensions in screening machine performance is based on two elements. The first requirement is the high acceleration of the screen at a frequency of 18001/min, which practically throws the product being screened into the air so that when it hits the screen on the way down it will be separated as required. This process is known in physics as "gravitational acceleration". To be fully effective, the screen has to move as fast as possible in the opposite direction to the product being screened. Something that requires extremely high rates of acceleration. As acceleration rates of 9.81 m/s² are hard to envisage, but the term 1 g is



more familiar, the screen's actual acceleration of 981 m/s² is specified at 10 g. To be able to separate particularly tenacious products, an acceleration exceeding 6 g is needed – a value that screening machines commonly available until now have never been able to achieve. When you look at the general design of the PACO MAG 10, you can immediately see that it is a powerhouse of hitherto unknown capability. And when you look at the technical data you are even more sure (see also: www.paco-online.com/mag10). But behind – or to be more exact: below – all of these advances in

screening technology is the second requirement: the high performance PACO metal screen cloths as well as the specially designed screen frame that has been specifically developed to fulfil the demands of the MAG 10. Extreme performance can only be achieved through extreme quality.

From energy through materials processing to chemicals

Since the PACO MAG 10 has gone into production it has proved itself in a wide range of applications. Substrates containing heavy oils were always considered extremely difficult to screen – the MAG 10 has made them controllable. For full screening in the building and non-metallic material processing industries, conventional screening machines were unable to provide acceptable results when the moisture content exceeded 1%. The MAG 10 can deal with moisture content of up to 3% (separation 85 – 90µ).

Also in the screening of dry powdered clay with a particle size of 100µ, MAG 10 power has successfully passed a series of tests that previously would have not been possible in an economically viable working environment. And the list of successes continues with the screening of suspensions that, in part, are potentially chemically aggressive (caustic soda solutions) – with different solids contents, feed amounts and screening performance parameters. It can already be said that there is already a large world-wide demand for screening machines with the capabilities and development potential of the PACO MAG 10. Further tests continue to be carried out. We will report on these in a future issue.

g – Unit of measurement for gravitational acceleration

When, during screening, a product that has been thrown into the high air is pulled back onto the screen through the attractive force of the earth, this can be specified through a unit of measure. It is simply called "g" and has its origins in astronomy. It defines the acceleration that a body in free (unobstructed) fall possesses. In the vicinity of the earth's surface 1 g is the equivalent of 9.81 m/s², whereby there are variations between the polar regions and the equator. But we don't want to unnecessarily complicate things. It is sufficient to know that the PACO MAG 10 can produce an acceleration of considerably more than 6 g. That is more screening power than an industrial screening machine has ever produced before.

New headquarters completed:

More Room – More PACO!

Plans to significantly expand the company headquarters in Steinau have been ripening in the PACO boardroom for a number of years. But in time, this desire has become an absolute necessity – there was no alternative to creating additional capacity for office space and the company infrastructure. At the end of a construction period that extended throughout more than 12 months, the new headquarters have recently been commissioned. Although this event occurred pragmatically, without any particular celebrations, it nevertheless marked another important step forward in the more than fifty year history of PACO.



The 250 m² extension and modernisation of the PACO group headquarters in Steinau not only creates optimum working conditions but is also well equipped for visitors and guests.

A difference that impresses

At PACO, hospitality was always something completely normal. But as, like most SMEs, we have always considered work to be more important than having a cup of coffee together, welcoming meeting and lunch rooms were rare to say the least. This and a lot of other things have changed in the new PACO headquarters. The difference to beforehand can be clearly seen from the outside. A modern

façade with a larger company logo and an appealing entry area. The reception area has also been more generously proportioned, although we have resisted the widespread trend of going over the top and pretending to be something that we are not. We far prefer a sense of understatement.

To meet our guests as well as to hold internal team meetings, we have created state-of-the-art conference rooms. And finally much of the remaining 250 m² has been used for additional spacious and professionally equipped offices. Suspended ceilings with integrated lighting make sure that there is a productive working atmosphere – just as much as the potted plants that are also moving in. The verdict of our staff: everything is more spacious, lighter, more attractive and harmonious – it makes you feel good. In other words, the investment of about a million Euros in the expansion of the PACO headquarters has definitely been money well spent.



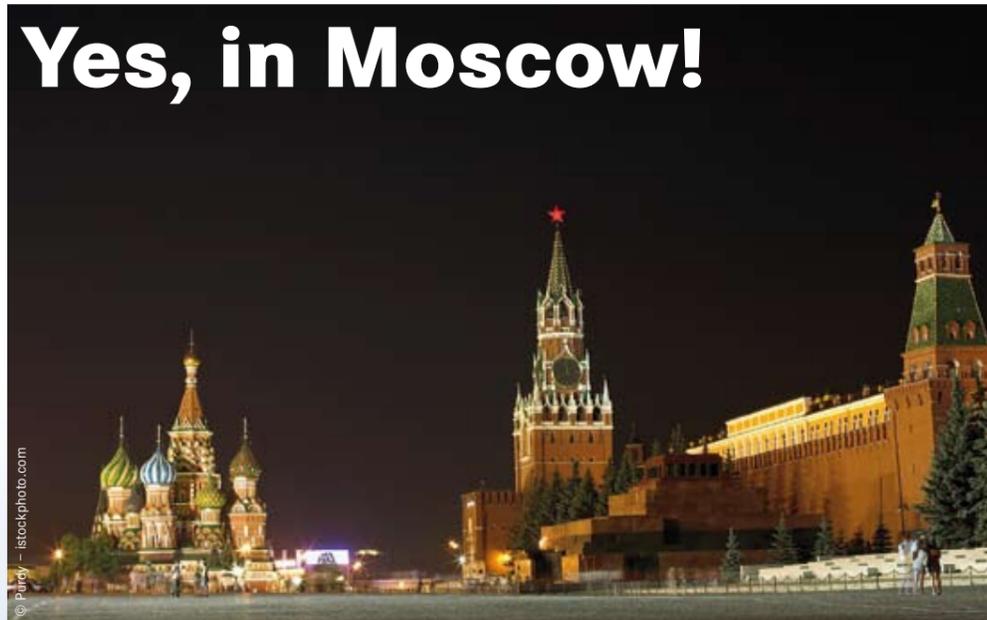
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Show Report ICA 2008: Is That Possible?

Yes, in Moscow!



There is probably no other city west of the Ural that flaunts its capitalistic talents as blatantly as Moscow – the capital of the Russian Federation. In line with its growth into a leading economic centre, it has also become a first-class address for trade fairs – particularly when they focus on the recovery and production of natural gas, oil and other commodities. As a versatile solution-provider for the extraction and processing of commodities as well as other key industries, PACO wants to establish and develop its position in this and other markets that share a promising future. A successful step along this path was its participation at the International Chemical Assembly ICA 2008 trade show in Moscow – amid unusual surroundings.

Russia – energy reserves for the whole of Europe

Russia's rise to become a leading economic force is, to a large part, due to its considerable reserves of natural gas – the largest on the planet. It is in ninth place as far as fossil oil is concerned and it holds a quarter of the world's deposits of coal. For a number of years Russia, and its, for the most part, fully or partly nationalised companies have been able to profit from the high energy prices on the world market. And even if it is seeing a temporary drop in income due to lower commodity prices, this is not going to cause the abundance of its natu-

ral resources to significantly decline. The largest country in the world has got time on its side: there will be very little reduction in the demand for energy from oil and natural gas and the next boom in the global economy will see procurement costs rising again. The members of the EU are heavily dependent on supplies of natural gas from Russia, even in the light of an increasing use of regenerative energy sources.

ICA 2008 – the 2nd international chemical trade show in Moscow

The EXPOCENTRE in the heart of Moscow is fully in line with international stan-

dards. The support from the exhibition service team is both friendly and professional. The PACO booth in Pavilion 2 of Hall 1 was well-placed and equipped with everything needed for a successful show presentation. After seeing the ICA start well in 2006, the re-run in 2008 attracted even more interest. A fact that can be confirmed by Peter Ruppel and Matthias Gilges who represented PACO at the trade show – there were plenty of visitors to the booth from a wide variety of industries: energy, chemicals, construction materials, artificial fertilisers, machine manufacturing and apparatus engineering etc. The broad range of original filters on display that visitors could more-or-less get their hands on proved to be a particular advantage. This was a great way of overcoming the language barrier that sometimes existed. It was interesting that the people that we talked to at the booth more often than not spoke German rather than English – but most of all Russian. The next time round which, due to the resounding feedback that we got, is sure to happen; we are going to need a banner with a Cyrillic script and plenty of information handouts in Russian. The goals that PACO set itself for its first participation at the ICA in Moscow were definitely achieved: promising contacts with potential customers were made, a general idea of the market was gained and the name PACO became

better known in Russia. And progress was also made in finding a suitable distributor.

Moscow – somewhere completely different ...

Where do you have to pay 1.800 US \$ for an office in the city? Not for a month, but for a square metre! Where do you see such a large proportion of premium brand cars lining the streets – Mercedes Benz, Audi, BMW, Porsche? Where do you drink vodka out of water glasses – and that on a 24/7 basis? In Moscow, a city that simply cannot be judged by normal standards – and even less when you start talking about prices. A normal hotel room there costs as much as the president's suite in most other towns. After a long hard day at the show, Peter Ruppel and Matthias Gilges settled down to some Spaghetti and a glass of wine at an inconspicuous Italian restaurant. The rather average meal was followed by a top-notch bill so that it was considered better to walk back to the hotel to save the cost of the taxi. Before departing, the tight schedule still allowed a quick look at the Kremlin – and that is also something completely different to anything else that you can see anywhere else in the world.

Filter products to get your hands on: Matthias Gilges with a visitor at the PACO booth at the ICA 2008 trade show in Moscow.



**PACO.
EXPORT.REPORT.**

PACO FACTORY II:

Sieve Screening Works Continue to Expand

Since the autumn of 2008 PACO factory II in Steinau has a covered area of 6000 m². 500 m² of this alone is taken up by the extension of the sieve screening works, which continues to dynamically grow. Additions include a sand blasting chamber, a high pressure cleaning system for screen frames, additional production area for sieve screening and a new store for screens and accessories. The next issue of PACO WORLD will contain a detailed report.





Open Day at PACO: Invitation to Take a Good Look and Have Fun.

Companies also have the responsibility of being good neighbours. For decades now, PACO has been more than happy to honour this responsibility at its sites in Steinau and Herolz. That is why a few weeks ago PACO invited all of the inhabitants of Steinau to visit factory no. 2 in the town. The open day proved to be a great success that exceeded all expectations.

Its easy getting to know each other

Steinau an der Straße is a town that has developed in such a way down through the centuries that most of its neighbours know each other very well. But most of the companies on the industrial estates just about know their neighbours names – if that. The way to change this was shown by PACO with their invitation to an open day. Not only family and friends of the workforce took this up, but also a lot of other interested people from Steinau and the surrounding communities. They all had the chance to take a good look at the premises of factory no. 2 in the town's western industrial estate and be treated to a guided tour through the production area. The PACO staff on hand willingly answered any questions that the visitors raised. Many were particularly fascinated by the fact that there are metal wires that are thinner than a human hair and that PACO can turn these into high-tech products. In general, the extremely wide range of products and applications in the PACO portfolio made a lasting impression on the guests.



The open day at PACO provided a varied program of information and entertainment – from information about apprenticeship and training schemes through to entertainment from one of the area's favourite bands.

Enjoying a cosy get together

Being a thoughtful host, PACO put up a marquee and filled it with benches and tables specially for the benefit of its guests. It goes without saying that there was also no shortage of drinks and snacks. Although the event was originally only planned for three hours it turned into a cosy get together that lasted into the early hours of the evening. It was as if everybody present had known each other for the full fifty years that PACO has been in existence at its home in Steinau. At the end, the PACO managing director Peter Ruppel made the point that although this was the company's first open day for the communities around Steinau, it would definitely not be the last. And that's a promise.

Bits and Pieces:

Is life a business that doesn't cover its expenses?



A philosophical comment about the banking and finance crises to reflect on:

"Happiness ... always lies in the future, or else in the past, and the present may be compared to a small dark cloud which the wind drives over the sunny plain: before and behind it all is bright, only it itself always casts a shadow. The present is therefore always insufficient; but the future is uncertain, and the past irrevocable. Life with its hourly, daily, weekly, yearly, little, greater, and great misfortunes, with its deluded hopes and its accidents destroying all our calculations, bears so distinctly the impression of something with which we must become disgusted, that it is hard to conceive how one has been able to mistake this and allow oneself to be persuaded that life is there in order to be happy. Rather that continual illusion and disillusion, and also the nature of life throughout, presents itself to us as intended and calculated to awaken the conviction that nothing at all is worth our striving, our efforts and struggles, that all good things are vanity, the world in all its ends bankrupt, and life a business which does not cover its expenses; – so that our will may turn away from it."

Arthur Schopenhauer (1788 – 1860), German philosopher. Central work: The World as Will and Representation (1819), first translated into English by Richard Burdon Haldane and John Kemp in 1883. Schopenhauer knew Goethe, Wieland and the Schlegel brothers. His thoughts influenced the works of Friedrich Nietzsche, Richard Wagner, Leo Tolstoj and Thomas Mann among others.

PACO's Short Guide to Manufacturing



Work at PACO is characterised by a variety of different production techniques. We present the most important of these in a series that is appearing periodically in various issues of PACO WORLD:

7. Laser Cutting

The ability to cut with light – an idea that was first seen in Hollywood movies. Today, this technology is everyday reality in fields as diverse as sheet metalworking and hospital surgery – thanks to the laser. This term is taken from the first letters of the words "Light Amplification by Stimulated Emission of Radiation". PACO uses laser cutting in its sheet metalworking – for instance, to produce filters. Apart from its inherent higher dimensional accuracy and cutting edge quality, the advantages of this method are increased flexibility and the capability of economically producing small batch sizes. Production planning is a particularly important part of the laser cutting process – from the offline programming of the contours to be cut through to efficient post processing (contour compilation, space-saving nesting on to workpieces and determining the cutting sequence etc.). Of equal importance is suitable protection against the environmental and health hazards that result from the high energy of the laser beam.

Steinau an der Straße: Why "On the Road" is in the Name!

It is not unusual to add the name of a river that runs through it to the name of a town or city when a number of towns or cities share the same name: that's why Germany has Frankfurt/Main, England has Newcastle upon Tyne and on the fashionable edge of Paris you'll find Neuilly-sur-Seine. But why, for a similar purpose, should a town's name be descriptively extended with "an der Straße", which can be literally translated as "On the Road"? Is it something special to be "On the Road"? In this case, the answer is most definitely yes: Steinau lies on the road between Frankfurt/Main and Leipzig – a route that has been particularly important down through the centuries. In other words, the Brothers Grimm town came to its unusual name as a lot of traffic was flowing through it. In the centuries that followed, emperors and kings as well as merchants and pilgrims followed the route that guided them through this town on the road.

The role of being an important station on a long journey – a stagecoach needed about 14 days to travel between Frankfurt and Leipzig – was successfully developed by the citizens of Steinau: wheelwrights, smiths and saddlers made sure that the travellers could safely continue their journeys, while barkeepers,

innkeepers and barbers etc. looked after the physical well-being of their paying guests. Even a coach-builder was able to do very good business in Steinau over a long period of time.

As the railway came, the road through Steinau lost its importance. Its role has now been taken over by the A66 Autobahn from Wiesbaden via Frankfurt and Hanau to Fulda – nowadays there is an exit that leads to Steinau a.d. Straße. The travel links may have changed, but one thing has stayed the same: the sincerity and hospitality with which Steinau greets its visitors and travellers. Why not try it out for yourself!



From the PACO Archives of 1983

Gerhard Lauer, the former factory manager at the PACO plant Herolz, was rummaging through his records when he found an interesting note: on 26.11.1983 the factory in Herolz commissioned its first wire loom with belt drive. This was machine no. 23 that was completed after a construction time of four weeks. Today the PACO in-house machine construction facility looks completely different as can be seen from the photo.



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All information in this edition of PACO WORLD has been carefully checked prior to publication. Nevertheless, we can make no guarantee for completeness, accuracy and up-to-dateness.

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