

PACO

WORLD

Our International
Wire&Mesh Magazine
for Existing and
Prospective Customers

No. 4 07/2002

The Art of Filtering Customers' Needs

Dear Reader!

The whole world is eagerly waiting for an economic turnaround! But where is it going to come from? All the way up into higher governmental circles, the most frequently voiced hope is that it will come our way from the USA! The big question, however, is where are companies in the United States going to generate the needs and the money to justify the orders we are desperately waiting for? Any uncertainty here is fuelled by the fact that there are still no clear indications that the US economy has started to pick up. Maybe we are simply trying to make life easier for ourselves, by letting others do our work for us.

I think that every economy and every company is called upon to improve its own situation – regardless of how dependent our country is on exports. Behind every export order is a customer with his own special needs or better still: there is a customer looking for the solution that will guarantee him the competitive edge.

The way in which customer requirements can help with the development of a successful line of business is well illustrated by our filter making activities. Originally, more or less a by-product of our metal wire weaving business, filter making has become one of the pillars of PACO's operations. This development has nothing to do with simply making the most of a favourable economic climate, but has been carefully nurtured through close co-operation between our customers and ourselves. Through in-depth discussions, we isolate the exact filtering problem and determine, together with the customer, what they expect from their solution. This has meant that, alongside the flat filter, a wide variety of filter types are available and that solutions can be provided for everything between the simplest and the most specialist of applications. Today, PACO is one of the leading suppliers of filters made from precision metal cloth. And I am sure that there is no limit to the list of things that our customers and markets will demand of us in the future.

Best regards
Peter Ruppel
Managing Director



Making the Finest Filters: Important is "What You Get Out of It"

The step between weaving cloths from the finest wire threads and making filters occurred quite naturally at PACO. The result is a production area providing employment for approximately 100 persons, an extensive machine inventory and a variety of filters for an almost limitless range of applications.

Filter: one term – many functions
Whoever thinks that the sole purpose of a filter is to extract unwanted particles from a liquid – for example, when brewing coffee – is warmly invited to carefully read on. They will find that filtering is one of the most interesting and varied operations among a wide variety of processes involving liquid and gaseous substances. Potential applications include filtration and separation just as much as throttling and dampening as well as the dispersion and equalizing of media. As can be expected, the range of possible uses of PACO filter products is just as wide. The spectrum including anything from re-usable coffee filters for the catering trade to gas-retention devices in the satellite tanks of the ARIANE 5; from biotechnology through machine building to plastics manufacturing.

Inherent advantages of metal wire cloth

Metal wire cloth is, of course, in competition with other filter media, made of materials such as textile fibre, plastics or paper. Nevertheless, regardless of the material used, the user is first and foremost interested

in "what they get out of it", and not just in the sense of how something is filtered. Most important are factors such as reliability, performance, operational fail-safety, long lifetimes and re-usability. This is where filtering solutions based on PACO metal wire cloths come in, as they comfortably fulfil all of these requirements. The factors mentioned above come just as much out of the consistently high production quality as out of the way that innovation is channelled to the specific requirements of the individual customer.

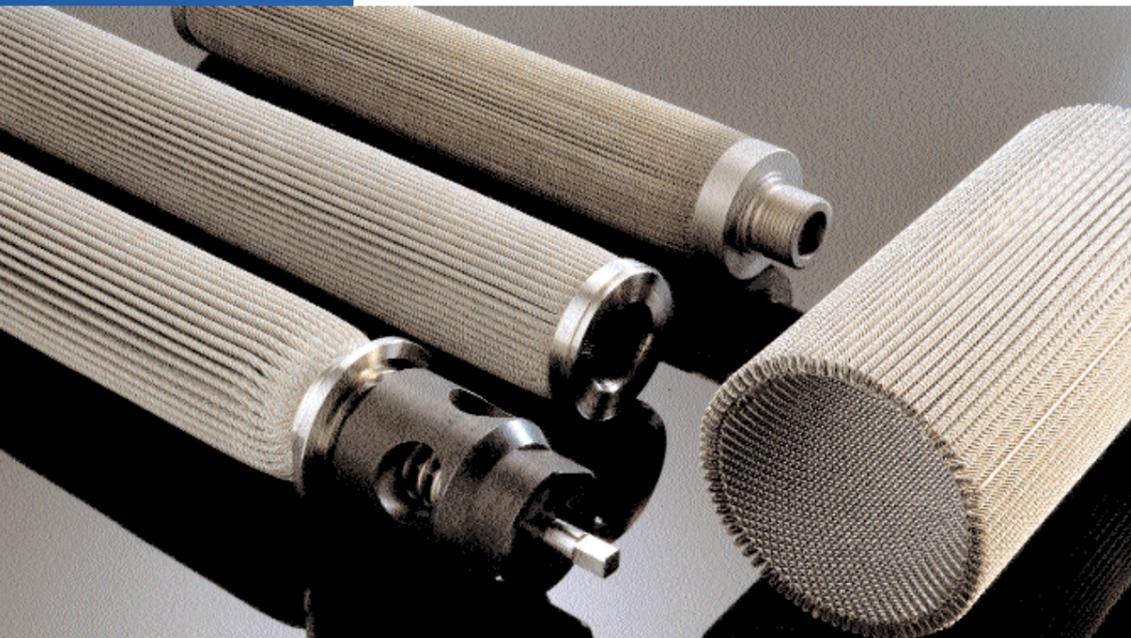
Making machines to make a wide variety of products

The range of filters produced by PACO includes a wide variety of flat filters, fine filters that can filter down to 3µm, filter candles, filter baskets and special filters made of metal wire cloth, sintered metal fibres (PACOFIL) or mesh laminates (PACOPATE). This variety is manufactured using an extensive range of machines that have been designed and produced by PACO's own mechanical engineering team. These employ the latest production techniques such as resistance, plasma and electron-beam welding; automatic turning; NC milling and, of course, computer-assisted weaving. Interestingly, quality management, statistical process control and the continuous recording of all operational and machine data was fully integrated into PACO process management long before the introduction of ISO 9001-2. A number of filter elements undergo a wide variety of test procedures during production to ensure that they fully comply with customer specifications.

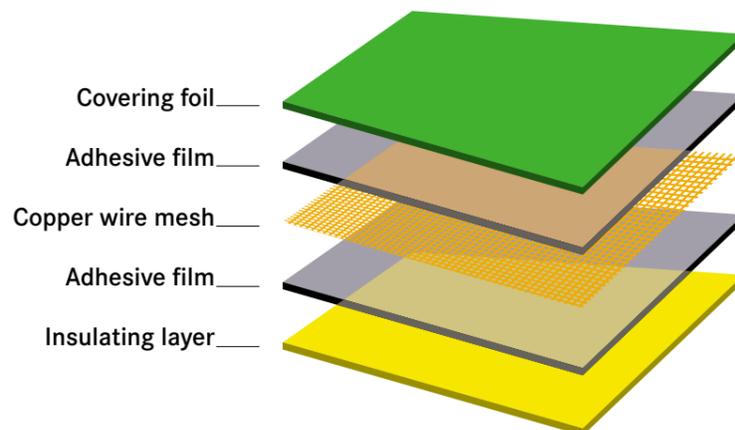
All filter elements offered by PACO are products of PACO's own R&D and fabrication. A number of PACO filter innovations have become industry standards.



The Latest About PACO Filters



PACO offers a comprehensive range of filter candles. These are manufactured from PACO metal wire cloth as well as sintered metal fibres such as PACOFIL.



A high precision mesh made by PACO out of copper wire is the "heart" of this efficient EMI shield.

High Tech Filters for Electronics Applications

Metal wire cloths are being used more and more to shield devices, housings, systems and rooms against electromagnetic radiation. The highly specialized products required for such applications place extreme demands on materials and manufacturing processes. Drawing on a wealth of experience gained from the development and production of special metal wire cloths, PACO has committed itself to provide ideal solutions for this ever increasing market. Laminated filter shields made of copper, stainless-steel and silver-plated stainless steel mesh are available with a large selection of surface finishes. The use of tinted cloths, for example, provides optimum transparency while at the same time preventing unwanted surface reflections. Other PACO special products have been developed for use with electronic monitors and displays. They provide optical filtering that allows the largest possible transmission of light from a signal source, while at the same time blocking unwanted secondary light. The main applications for these PACO optical screens are contrast filters, LCD filters, infrared filters, diffusion and reflection filters as well as EMI filters.

Demand for Filter Candles Steadily Growing



The demand for inherently robust filter candles that provide the finest filtration, high flow rates and long lifetimes is continually growing. Filter candles – also known as cartridge filters – are a filter housing into which one or more cylindrical filter elements are arranged. PACO covers the needs of both deep-bed as well as surface filtration with a wide variety of filter materials and types.

Through close co-operation with our customers' process technology departments, we have produced solutions that are exactly tailored to the filtering requirements of each individual customer. These solutions are highly

valued because of their ability to perform at high operating pressures, high temperatures and high differential pressures while, at the same time, providing excellent flow characteristics, being resistant to chemicals, having high filtration accuracy, good regeneration capabilities and an attractive price/performance ratio. This is rounded off by important ecological advantages: PACO's highly developed weaving technology means that they fully dispense with oils, greases and other lubricants during weaving. In other words, there is no need for subsequent treatment with aggressive, environmentally harmful cleaning agents.



"Clean it, don't trash it" is the motto of the "Two-mode" ultrasonic cleaner with hot fluid flushing made by Bodensohn Präzision, Seligenstadt, Germany. After just three minutes of cleaning, a PACO metal filter from a diesel engine is 100% fit for re-use.



Cutting Costs by Cleaning Filter Elements

Metallic filter elements are regenerable, i.e. they can be cleaned and re-used over and over again. A fact that clearly distinguishes them from conventional disposable filters made of materials such as paper or textiles. In view of the ever increasing rise in the cost of environmentally conscious waste disposal, it definitely pays process and production sequence planners to choose items, such as filter elements, that can be repeatedly re-used. This is already becoming standard practice in a number of areas requiring liquid filtration, in particular polymer melt filtration, but also in the pharmaceutical industry, paint and lacquer manufacturing, the chemical industry as well

as in the processing of lubricants and the operation of diesel motors. That is why, in addition to its production of metal filters, PACO has intensified its links with companies that specialize in the regeneration of filter elements. Already today, innovative cleaning techniques are available that combine extremely high efficiency with low stress on materials. An automatic efficiency test after each cleaning cycle ensures that no defective parts are put back into production. Apart from significantly extending the lifetimes of the filter elements, this also prevents processing operations from being needlessly interrupted.

Weitere Informationen
www.Paco-online.com

PACO Spin Packs in Use Around the World

The entry of foreign particles into fibre-forming substances during melting is extremely detrimental to fibre production – the result can be anything from quality problems to downtime. Unwanted incidents of this nature can, however, be successfully prevented through effective filtration. This is, however, not as easy as it sounds: the development and manufacture of filters for spinnerets requires a considerable amount of know-how as well as exact reproducibility of quality and precision during production. That is why synthetic fibre manufacturers around the world rely on PACO spin packs for their spinning processes. PACO offer products for every known process for a wide variety of viscosities for the most common synthetic fibres, from polyesters through to polyamides. The filter media offered by PACO consist either of individual filters or complete filter packs. Continuous filter-systems, such as "Autoscreen Units" which ensure a constant melt filtration without interrupting the processing flow, do work with PACO meshes based on reverse plain or reverse twilled Weave constructions either in normal or broken-twilled design covering a filter-range of 40 – 500 micron. This system is based on permanently transporting a filter-coil (ribbon-belt) depending on process pressure, always ensuring free filter-area.



Unit for plasma-cutting PACO-Autoscreen-mesh preventing from unravelling in the later processes.

Commitment – Unfiltered

Interview with Joachim Müller, Manager of Filter Production at PACO



Joachim Müller, technical works manager for PACO filter manufacturing, is responsible for a team of 100 staff.

Herr Müller, how long have PACO been making filters?

Almost as long as I have been with PACO, and that is almost twenty-five years now. It all started with just a few types of filters. More and more demand has meant that a complete production division has grown up. Today, filter making alone provides work for about 100 people.

What does a good filter maker need?

The most important thing is commitment, interest in the job. Of course, you have to understand your trade, for example, as a toolmaker or industrial mechanic, as it is known in Germany today. When the interest is there, you come to appreciate how exciting the work in general is. The

different types of filter elements and numerous applications. You somehow get the feeling that, as a filter maker, you've got your finger in every pie. When you order a coffee at a restaurant, a truck drives past or you see the launch of the Ariane 5 on TV – PACO metal filters are most likely playing their part.

What are the stages in your own career at PACO?

I am a toolmaker by trade. In 1980, I successfully took my master craftsman diploma. I then started to teach the apprentices and became more and more responsibilities until in 1991. I was appointed technical works manager for PACO filter manufacturing. I never aimed for this – it just worked out that way.

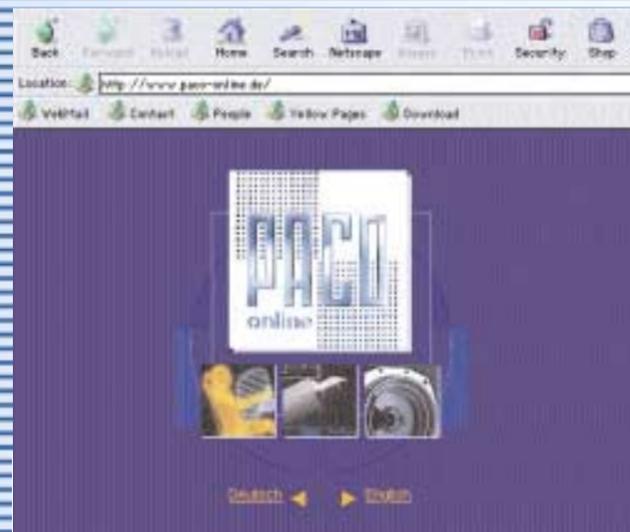
And that's all right?

As far as I am concerned, yes. But you had better ask my staff.

Is there anything, connected with your work, that you are especially proud of?

Especially proud ... Yes, the apprentices that I have taught and that have made something out of their apprenticeship – regardless of whether they have stayed at PACO or are working somewhere else today. And then I am proud of our R&D successes, the filter ideas that we have developed that today's market looks on as being the state-of-the-art.

Mr. Müller, we thank you for the interview and wish you all the best for the future.



Visit us online!
www.paco-online.de

PACOs Short Guide to Weaving

4. Reverse Plain Dutch Weave

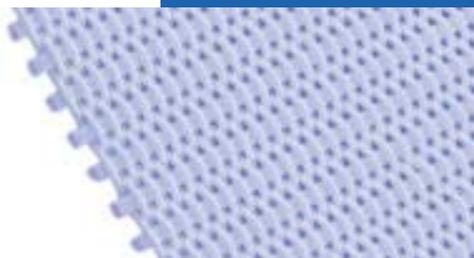
The last part of "PACO's Short Guide to Weaving" presented the dutch weave as weave with a particularly large number of variant types. A special type of dutch weave that is very often used for filtering is the reverse plain dutch weave.

As the name implies, the arrangement of the warp and shute wire is reversed as compared to Plain Dutch Weave. This provides a higher mesh count in the warp direction rather than the weft (shute) direction. The weft wires are also, in general, considerably thicker than the warp wires.

The reverse plain dutch weave is especially popular among filter manufacturers as it

provides excellent flow rates and an especially stable mesh. In addition, reverse plain dutch weave filters can be easily regenerated and are, therefore, extremely economical.

The reverse plain dutch weave is valued in filtering for its stability, performance and cost-effectiveness.





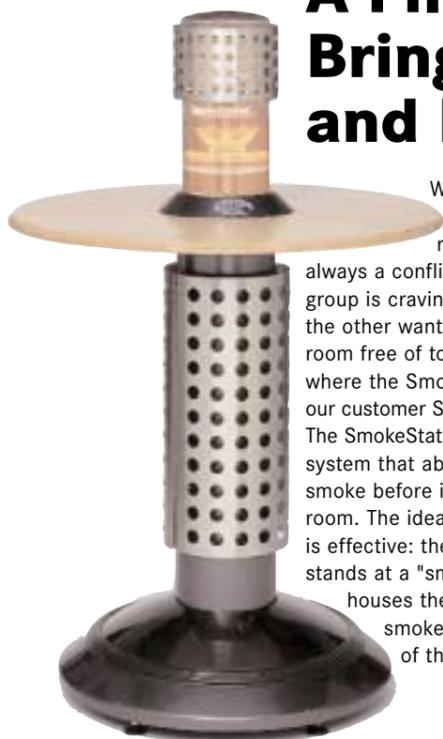
PACO Commissions its Fourth Annealing Unit



Annealing of metals is one of the most important processing techniques for improving the physical characteristics of a material. In March 2002, PACO commissioned a fourth continuous annealing oven for heat treatment of metal wire cloths with a width of up to 420 mm (16-1/2"). The total cost of the investment was approx. 280.000 Euro. The temperature range of the furnace is 750°C – 1.200°C. For process control, the unit is equipped with an electronic temperature regulation system (multi-zone regulation system), a controlled inert gas feed and a special visualisation device.



SmokeStation® – A Filter Innovation Brings Together Smokers and Non-Smokers



Whenever smokers and non-smokers are in a room together, there is always a conflict of interests. One group is craving to light up, whereas the other wants to keep the air in the room free of tobacco smoke. This is where the SmokeStation®, produced by our customer Somantec®, takes over. The SmokeStation® is an air cleaning system that absorbs the cigarette smoke before it starts to spread in the room. The idea is just as simple as it is effective: the smoker comfortably stands at a "smoking table" that houses the filtering system. The smoke is sucked in at the top of the system, guided for

purification through the table leg and leaves at the foot, free of the smell of tobacco. PACO plays its part in improving the atmosphere between smokers and non-smokers by providing a specially developed filter made of stainless steel wire cloth.



Steinau a.d. Straße: A Great Place to Work and Celebrate!

The vitality of a town is not only reflected in its economy, its infrastructure and its social and cultural facilities. A healthy community spirit can also be recognized by taking a look at the way a town celebrates. The inhabitants of Steinau have plenty of opportunities to demonstrate the spirit and vitality of their town by celebrating in the streets!

Starting in February, with Christmas celebrations still fresh in mind, the people of Steinau light the traditional Hutzelfeuer bonfire to drive off the winter. This ancient custom is the start of a series of festivals and fairs that are indelibly written into the Steinau calendar every year. The fairy tale festival held in the Amtshof draws numerous visitors from near and far. Events, of course, centre around the Brothers Grimm who lived in Steinau between 1791 and 1796. The Jockesmarkt market – held in honour of Saint James – is the Steinau market that is perhaps the most steeped in tradition. It is always held at the start of the Hessian state summer holidays.

Another notable summer festival is the Steinauer Backhausfest (Steinau Bakery Festival). This is celebrated in the grounds of the cattle yard, which is part of the old palace mews of the Counts of Hanau. With brass bands, folk dancing and folklore, everybody that attends can be sure of plenty of atmosphere and having a really good time. The festival highlight is celebrated every Novem-



ber – the historic Katharinenmarkt. This fair is dedicated to the patron saint of the town – Saint Katharine – and follows on a tradition that dates back more than 710 years. This means that if you come to Steinau when a festival is on (and the chances of that are quite high!), plan time in your diary to visit the fairground with us, we're sure that you won't regret it.



Imprint

Published by
PACO PAUL GmbH & CO.
Metallgewebe und Filterfabrik
Industriegebiet West
36396 Steinau a.d. Straße
Phone: 49 66 63 97 80

Editor, copy:
ralf.geisler@t-online.de

Graphic design:
info@knoechel.info

Printed by:
Brönners Druckerei,
Frankfurt am Main

Photos:
City of Steinau
PACO GmbH

Bits and Pieces

The Generated Employee

(freely adapted from Erich Kästner*)

Professor Bill has invented the generated employee, Online orders only, at premium price plus postage and admin. fee. It's amazing that after just minutes of his production, You get as standard everything that's normally an option.

"You'll be overwhelmed at how smart he is and what he can do", Said Professor Bill at the world-wide launch show. With each new link in the CD-ROM handbook adaptation: You're reminded of just how little you've paid for perfection.

He's born with the right credentials and master degree, Fully qualified and eager for the chosen career. After all, training and college is a waste of precious time – And best of all: he'll not want wage cheque, dollar or dime.

Professor Bill says "when looking for skills, never chance it", Just click prof-bill dot com and add an employee to your basket". Delivery is per parcel express overnight, right to the heart of the plant. Fully trained and ready to go, there's no job to be done that he can't.

If the success keeps on, Professor Bill will upscale his operation, From 300 types offered today, thousands more'll go into production. Of course, send it back if you don't like what you get. For the next user we'll just have to change the EPROM set.

Lack of skilled staff is sure a thing of the past. Professor Bill keeps saying "he does nothing by half", For him, the export of siblings is a real doddle, If needs be, he'll even send the "Green Card" model.

*These lines are based on a German poem called the "DER SYNTHETISCHE MENSCH" (the synthetic person). It was issued by its author Erich Kästner in 1932 and rather prophetically looked at what gene technology is seemingly in a position to do today. Our adaptation focuses on the shortage of qualified staff that is a problem in a number of industrialized countries. A fact that all too often is swept under the carpet by politicians and unions, thereby creating a situation that is not only to the disadvantage of smaller industrial companies.