



PNEUMATEX®

Charta

Principles of dynamic
water management

References: Thousands of customers have chosen Pneumatex, millions of buildings have been equipped with our products. Small, big, famous and anonymous, like care homes, bank buildings, libraries, breweries, city centres, data centres, factories, district heating systems, television buildings, towers, airports, football stadiums, prisons, courts of justice, swimming pools, colleges, hotels, nuclear power stations, exhibition centres, military buildings, waste disposal sites, palaces, schools, shopping centres, hospitals, sports centres, government buildings, supermarkets, telecom buildings, zoos, universities, administrative buildings, and so on. Besides that, also hundreds of industries and process systems are being served by us.

Amongst company buildings we count 3M, ABN, Amro, ABP, Admirant, Agfa, Airbus, Akzo, AMC, Amgen, AOC, Arcelor, ARN, Artis, Bayer, Berna Biotech, BIAC, BIZ, BMW, Boehringer, Bosch, Camel, Carrefour, Ceské Budejovice, CGD, Coca-Cola, Commerzbank, Crédit Suisse, Crowne Plaza, DaimlerChrysler, DSM, Edel, El Corte Inglés, EO, EON, Esron, Essent, Eurocontrol, Flora Holland, Fortis, Generali, GlaxoSmithKline, Hilton, Höchst, Hyundai, IBM, IKEA, ING, Interbrew, Janssen Pharma, KBC, Kempinski, Kodak, Liebherr, Müller Milch, Nestlé, Novartis, Novotel, Nuon, Opel, Orbis, Pastas Gallo, Peugeot, Pfizer, Philipp Morris, Philips, Pilatus, Pioneer, Pollux, Porsche, Quelle, Rabobank, RAI, Roc Aventus, Roche, Rolex, Roularta, RTL, Seat, Shell, Sheraton, Sidmar, Siemens, Sony, Swift, Swissre, Telegraaf, Toyota, Tranquilidade, TVE, UBS, UMC, UMCG, Verkade chocolate, Vodafone, Volkswagen, Volvo, VUM, Würth.

We are proud to serve world famous organisations and institutions like the European Community Parliament and Committee, the United Nations, Unesco, the international Labour Organisation, the international Telecommunication Union, World Health Organisation, World Meteorological Organisation, World Trade Organisation, and hundreds of others. We serve systems like the Jungfraujoch -Top of Europe, the CERN in Geneva, Europe's largest nuclear laboratory, research institutes like Pasteur in Brussels and Max Planck in Stuttgart, the castle Schloss Neuschwanstein, the wonderful Semper Opera in Dresden, the exquisite Van Gogh Museum in Amsterdam, the classic house of the Salzburger Festspiele, the impressive National Gallery in London, the trendsetting Pompidou Center (Beaubourg) in Paris, the list is endless.

| swiss made | **Pneumatex – Dynamic Watermanagement**

Innovative system technologies from a single source:
the Statico, Compresso or Transfero, in combination with the
Pleno backfeed and Vento degassing systems allow fully
automated operation, with connection to a central control system.

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Dynamic WATERMANAGEMENT

Stable pressure ratios, excellent water quality in heating systems, and a reliable, hygienic supply of drinking water; are the ideas associated with Pneumatex. We insist on user-friendly products, highest quality, and a comprehensive customer service. The Dynamic Water Management philosophy stands for spirit of innovation and proximity to customers, and represents the pioneering vision of Pneumatex.

Dynamic Water Management is the ultimate combination of technology and know-how. For efficient operation, reliability and longevity in

- Heating systems
- Cooling systems
- Solar systems
- Fresh water systems

Pneumatex takes an integral view of the system, where pressure maintenance and water quality are placed together at the centre.

Understanding and awareness

The Dynamic Water Management philosophy ensures efficient, long-lasting systems with trouble-free operation. Investment cost is also an important factor to be considered: The asset value of domestic systems and installations is protected – which thus helps maintain the asset value of the entire building. In short, with Dynamic Water Management, Pneumatex can save its customers a great deal of trouble, money and time.



Karl Willemen, CEO

„The philosophy of Dynamic Water Management is also fixed into company guidelines. It is the employees themselves who have defined the principles – so you will be able to judge the results for yourself day after day. As owner and corporate manager, I can personally guarantee you this!“

A handwritten signature in black ink, which appears to be 'Karl Willemen', written over a light blue background.

Perfect unity

Dynamic Water Management Water driven systems are complex installations in which all components must be tuned precisely to each other. In heating, solar, cooling or freshwater systems, both large and small, the basic interrelations are more and more often ignored or not understood.

As a result, the following typical faults occur:

- venting or degassing without optimum pressure maintenance
- removing acute sludge buildup, without curbing the continuing risk of corrosion (i.e. new sludge buildup).
- make-up water often supplied without resolving problems due to limescale deposits or pitting
- oxygen drawn in while degassing is in progress

From the above examples, we can see that precise tuning makes a lot of sense. An efficient, system has to be more than the sum of its individual parts. This is why the Dynamic Water Management philosophy of Pneumatex aims to ensure a seamless combination of uncompromising product quality, comprehensive know-how, and innovative technology for the benefit of our customers.



Prevention rather than cure

These days, being healthy doesn't just mean not suffering from an illness. Many people have in fact heightened their general awareness of health issues. As a preventive measure, people are increasingly paying attention to nutrition, taking part in sports, training themselves at the fitness centre and indulging in wellness activities – people are generally feeling fitter due to a holistic approach to their health. Dynamic Water Management also represents this approach: By taking an integral view of the system, we ensure that technology and infrastructure work together efficiently from the bottom up.



Removing the causes, not combating symptoms

When the interrelations are understood, it only remains to draw the correct conclusions. For example, there is no point in treating water with chemicals to prevent oxygen corrosion, when fresh oxygen is entering continuously at another location. Similarly, there is little sense in compensating for water losses by backfeeding. Any problems in the system must be resolved first.

The water factor

The most important component in the system is the water itself. This must be taken into account for the design and protection of the system. Otherwise, the following types of damage or undesired occurrences are inevitable:

- undesired vapour discharge
- gas emissions
- corrosion
- deposits
- sludge buildup
- cavitation
- erosion
- noise
- loss of efficiency
- scale
- bubbling noises
- presence of Legionella
- zero point shifting
- low pressure
- clogging



Deposits in the piping



Faulty pump



Seized valves



Continuous backfeeding



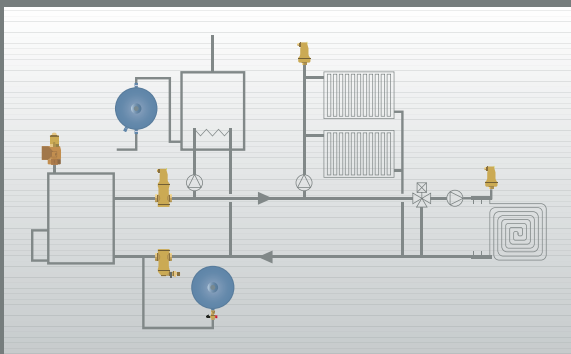
Radiators rusted through

Should water then, as an important factor, be disregarded because it is one of the cheaper components of the system?

Modern systems are more and more often showing faults and defects, which no one till now has taken into account – people have mostly been ignoring the devil in the detail. We all know the situation: The new system must be ready in the shortest possible time, and must be kept within a tight budget. As a result, important factors are often ignored.

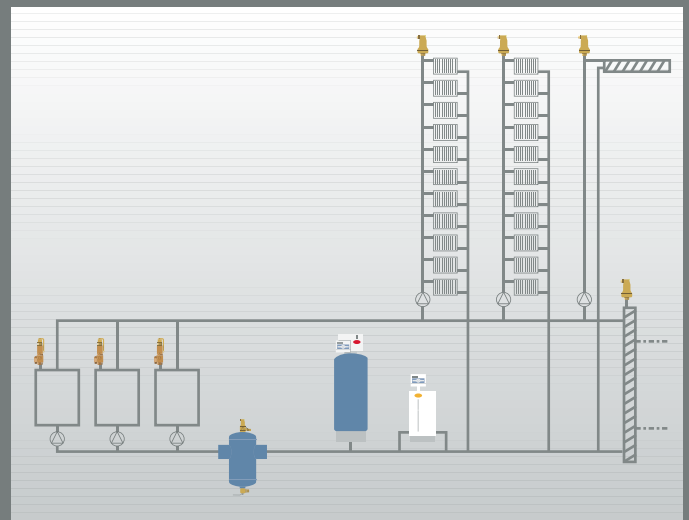
These days, more and more ordinary users are encountering the problem of seized radiator valves. Unfortunately, fewer and fewer specialists are aware of the relationships between pressure, air, and water quality.

The professionals at Pneumatex will be pleased to put their wide experience at your disposal. Why not give them a call?



Example: One-family houses

The Statico SD ensures pressure maintenance. No system is more reliable, or more durable. The Zeparo ZUT performs the initial venting, and the ZUV microbubble separator takes care of venting during operation. In refurbished systems, the ZUD sludge separator protects all new components from sludge accumulation. The Aquapresso ADF stabilises domestic water pressure and protects against the growth of Legionella bacteria.



Example: Large-scale systems

The Compresso CF performs pressure maintenance, the Vento V(P) performs degassing, and a Zeparo ZIO can be used as universal sludge separator. The ZUT is used for initial venting.

Know-how

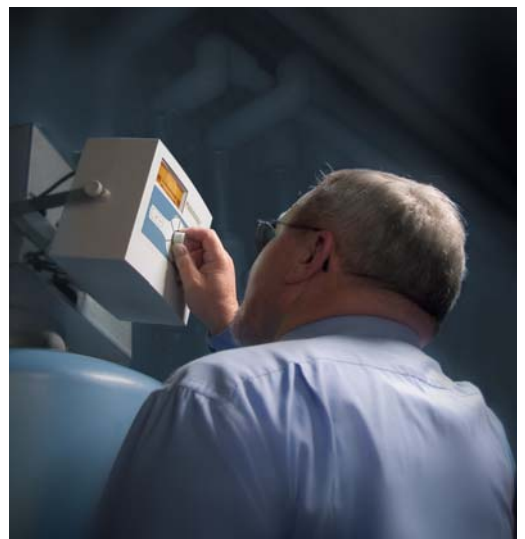
Our sales organisation watches the markets, and our developers and designers examine customer wishes and requirements and create their products accordingly. But all our pioneering spirit and potential for innovation is geared towards benefiting the customer.

Employees at Pneumatex obtain high professional competence through a wide variety of training measures, which are tailored to the particular requirements. We also arrange exclusive presentations on the subjects of pressure maintenance, sludge removal and degassing.

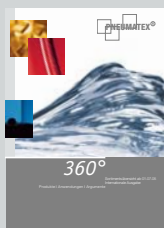
And an additional customer benefit is that our expertise can be consulted 24 hours a day: SelectP! is our Online planning and management tool, with a product line overview.

Our web pages contain a large variety of information, questions and answers, tips, illustrations and pictures. You can obtain comprehensive information about our products (including price list) and browse through all our brochures, dimensions, circuit diagrams, and assembly and operating instructions.

Our trained engineers will be pleased to advise you on site, our customer service personnel are always ready for a call-out, and our product managers and office staff are always prepared to give you the information you need, when you need it.



Pneumatex takes pleasure in offering you a variety of solution-oriented publications. These technical documents represent the enormous know-how acquired by Pneumatex. As a Pneumatex customer, you too can benefit from this know-how.



360°



Zoom



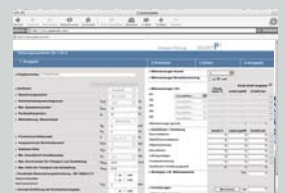
Manuals



Extracts

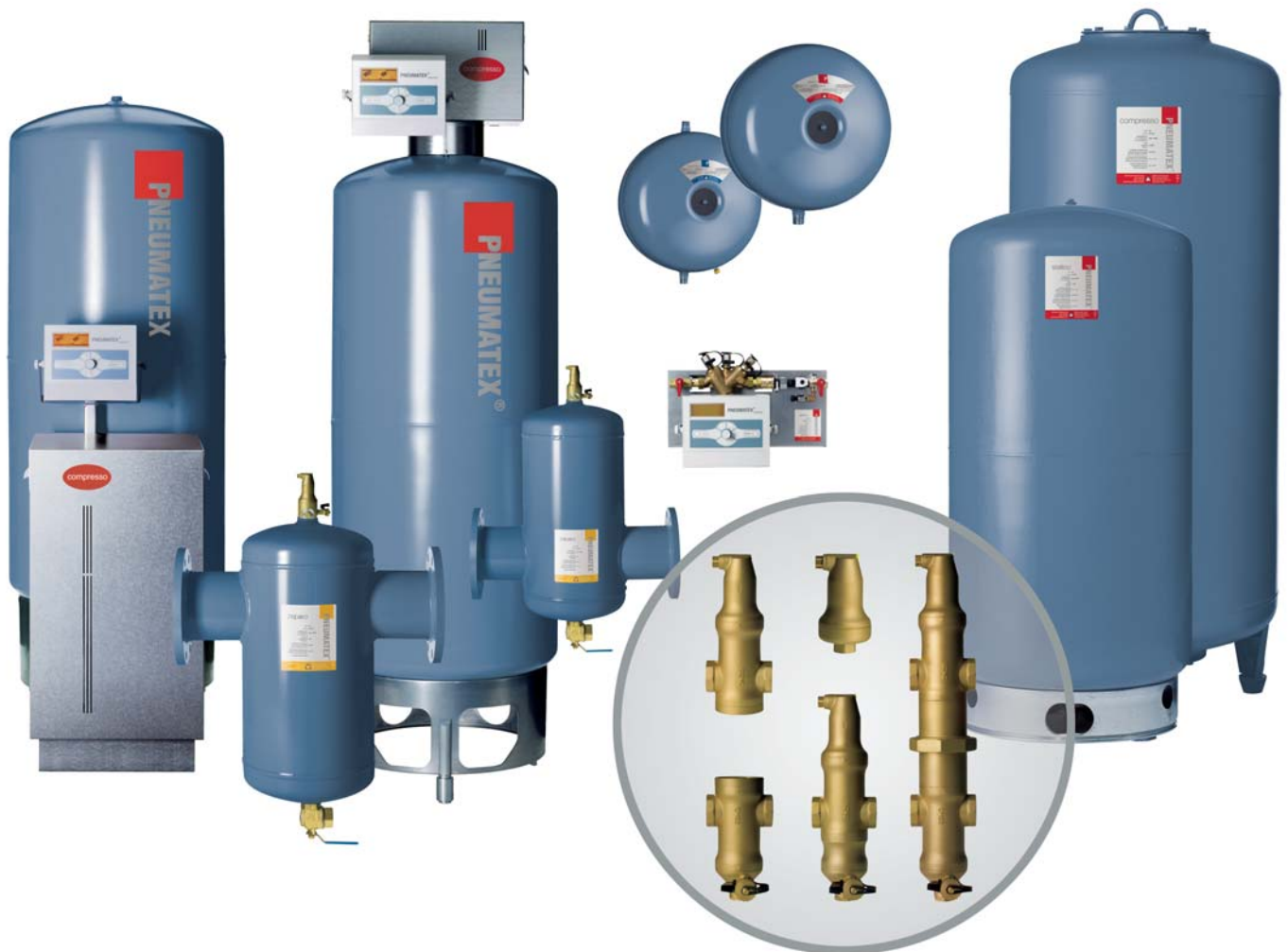


Internet



SelectP! online calculator

Products



airproof



fillsafe



oxy stop



silent run



dynaflex



secuguard



leak free



helistill



vacusplit



flow fresh

Technology

The quality features of Pneumatex products could be described as unique. The quality demands are balanced by the passionate commitment of our employees. Our production sites thus maintain the Swiss traditions of quality, precision and reliability.

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