



Sustainability Report
Schmalz ecoSYSTEM



Flags on the company grounds

Schmalz World of Vacuum Technology

Schmalz is the worldwide leading provider of automation, handling and clamping systems, providing customers in numerous industries with innovative, efficient solutions based on vacuum technology. The company employs over 1,000 employees in 17 companies around the world. More than 650 of these work at headquarters in Glatten in Germany's Black Forest.



With the DIN certifications according to ISO 9001 for quality management, ISO 14001 for environmental management and ISO 50001 for energy management we guarantee our partners standardized and sustainable processes.





Schmalz's headquarters in Glatten



Production building with view on the photovoltaic system

Content



Sustainable Entrepreneurship

ecoSYSTEM by Schmalz

4



Economy

6



Ecology and Conservation of Resources

8

Positive Energy Company

CO₂-neutral Production

Resource-Efficient Products

Environmental Protection and Communication



Social Engagement

18

Employees

Society

Measures and Projects 2015

23

Information About this Sustainability Report 2015

Base for this sustainability report is the J. Schmalz GmbH's headquarters in Glatten, Germany. Reporting period is the fiscal year 2015. The content of this report is leaned on the requirements of the Global Reporting Initiative for sustainability reporting.



Dr. Dipl.-Ing. Kurt Schmalz and Dipl.-Ing. Wolfgang Schmalz

Sustainable Entrepreneurship

We think long-term and not just quarter by quarter. Economic success, ecological responsibility and social commitment are closely interwoven at Schmalz. These values play a central role in our strategy – we bundle our activities in the Schmalz ecoSYSTEM.

Our drive for economic success forms the basis of our business. Since 1984, and therefore for over thirty years, we have been making an impact on the latest technology on the vacuum technology market. We want to go for efficient handling of products with vacuum, offer innovative solutions and impress our customers in order to further develop our leading position in the global competition. This ensures the long-term stability and independence necessary to practice sustainable entrepreneurship.

Currently, we are generating almost as much electricity and heat with renewable energy sources than the company consumes. Supplemented by resource-efficient production processes, Schmalz has a positive CO₂ balance and as a result helps to sustainably reduce environmental impact. Our customers benefit from our commitment because the focus lies on a high level of efficiency and optimum energy consumption also with our products. In 2015, we were presented with a German industry award for “Best innovation system”; strong evidence that we continue to innovate and do not rely only on past successes.

Social aspects are also important to us at Schmalz. We offer our employees a secure future and an up-to-date benefits package that covers all areas of life. At the beginning of 2015 we were awarded again as one of Germany’s Best Employers. We continuously invest in training opportunities for young people and work closely with schools, associations and social institutions.

The motivation for our business philosophy goes well beyond simply complying with legal standards, or securing competitive advantages. It is marked by the ethical and moral obligation to reduce the environmental footprint we as a company leave behind as far as possible. At the same time, it is a testimony to our willingness to accept our responsibility to future generations.

Schmalz shows how a production company can be explicitly run in a sustainable manner and how numerous innovative ideas can be put into practice. We want to inspire others too; take part and take action!

Dr. Dipl.-Ing. Kurt Schmalz
Managing Directors

Dipl.-Ing. Wolfgang Schmalz



Biotope beneath production building



ecoSYSTEM by Schmalz

Schmalz views sustainability as an integral system comprising economic success, ecological responsibility and social engagement. Numerous sustainability measures have been combined to develop the Schmalz ecoSYSTEM. ecoSYSTEM encompasses long-term stability, resource-efficient products and processes and stands for fairness towards customers, employees, suppliers and society.

Objectives and cornerstones of sustainable corporate governance at Schmalz are:

Economy

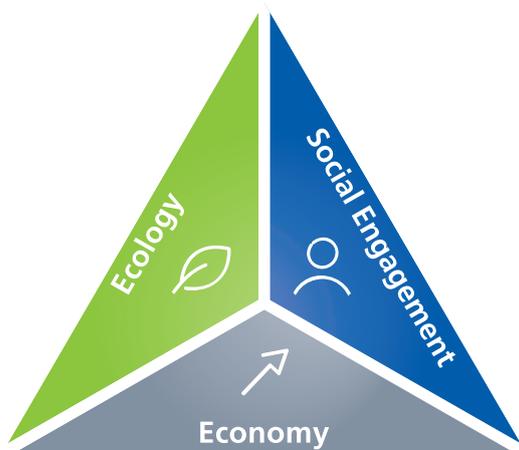
- Schmalz secures its long-term self-reliance and independence as a family business and therefore emphasizes a solid financial base.

Ecology and Conservation of Resources

- As a positive energy company Schmalz pursues the aim to generate more electricity and heat from renewable sources than is consumed in the company.
- Schmalz operates a CO₂-neutral production, thus creating a net reduction of CO₂ emissions to the environment.
- Schmalz develops, manufactures and sells products with significantly lower CO₂ emissions throughout the product life cycle (Product Carbon Footprint) than comparable products on the market.
- Schmalz takes a variety of measures for environmental protection and encourages through targeted communication to emulate.

Social Engagement

- Schmalz offers excellent working conditions and extensive employee benefits for obtaining and securing professionals.
- Schmalz supports the regional society and is actively involved in networks.





Vacuum tube lifter Jumbo for loading and unloading a CNC machining center

Economy

At Schmalz, exceptional commitment to social and ecological issues is consistent with their primary economic objectives. Economic efficiency, in the financial sense, is therefore a primary factor in our decision-making process. While some companies have to focus on turning a profit within the next quarter, Schmalz is planning and calculating for the long-term – for sustainability.

Family Business and Self-Reliance

Schmalz is a medium sized family business that is already managed by the third generation of the owner family – the long-term future of the company has top priority. The owners set great store by a high degree of innovation, a maximum freedom of scope and self-reliance of the company. The basis for all this is stable profitability and high equity capital adequacy.

Active Knowledge Management and Open Communication

Schmalz convinces its customers with high consulting expertise and decades of experience in the field of vacuum technology – both nationally and internationally. Beyond borders, the company relies on active knowledge management and a structured exchange of experience within the group of companies: with globally networked IT systems, its own training academy and continuous communication in national and international trade and project teams. Also, open communication is very important: Monthly, the company informs through its staff magazine about the objectives and current figures and measures derived from them. The intranet is the central platform for the exchange of employees worldwide.

Technology and Innovation

Ensuring a long-term leading role in a technologically demanding market calls for creativity and innovation as well as for the use of the latest technologies and the courage to blaze new trails. Schmalz invests 8.5 % of its annual turnover in research and development, more than 80 employees work in this department. In addition Schmalz is involved in a great network of universities and institutes. Approximately 450 granted property rights and a large number of new registrations each year argue for themselves.

Since entering into vacuum technology in 1984, the company has been a driving force in the design of automation, handling, and clamping technology. Schmalz provides solutions which represent energy efficiency, technological progress and premium quality. As a trendsetter, Schmalz has succeeded repeatedly in identifying trends at an early stage, has come up with market-driven innovations and set the standards. This means that, today, the company already offers a broad range of products for the networked intelligent factory of tomorrow. Schmalz has responded to the trend of ergonomic handling of loads with his versatilely usable vacuum lifters.



Assembly process according to the Schmalz Value Creation System



Fully automated small parts warehouse at Schmalz

Variety of Industries and Growth Markets

In almost all industries Schmalz products are used. The company therefore is active in a variety of industries – and therefore less vulnerable to cyclical fluctuations in individual markets. This creates stability and provides a solid base for investment in the further development of the company. International growing industries are the focus of Schmalz. Industries such as wind power, packaging, logistics, battery and automobile production, offer much potential for further sales growth. The objective: Schmalz wants to further expand its role as a global leading supplier of vacuum technology.

Internationality and Customer Focus

Customers all around the world rely on vacuum technology from Schmalz. A strong customer focus and excellent quality of service therefore have top priority at Schmalz. With a network of 17 own companies and trading partners in more than 60 other countries Schmalz ensures customer focus through personal advice and excellent service worldwide.

Suppliers and Partners

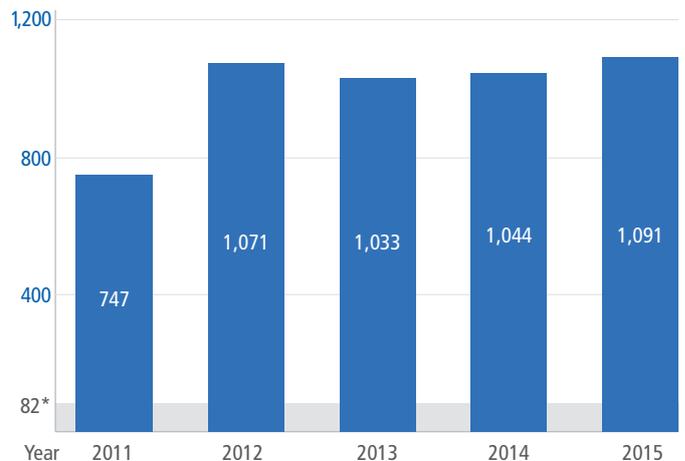
With its suppliers and partners, Schmalz relies on partnerships that are based on trust: Important suppliers are allowed to view the company's inventories. If the stock level drops below the specified minimum quantity, the supplier delivers more supplies. This means that Schmalz only stocks the resources that are currently needed. At the same time the suppliers can adjust their own production accordingly. This greatly reduces cyclical fluctuations in workload along the value chain, while increasing predictability and investment security for systems and facilities.

Organization According to Value Creation Processes

Flat hierarchies and the clear focus of the organizational structure according to value creation processes enable short distances and efficient workflows at Schmalz. This creates flexibility and responsiveness – and therefore employees and customers benefit alike.

Value Creation and Continuous Improvement

In order to stay competitive on-location, the company relies on streamlined process flows. Here, the Schmalz Value Creation System forms the base for the design of efficient processes. The employee suggestion system is a vital component of the Schmalz Value Creation System. All employees can participate by submitting their own suggestions on how to improve work processes or products. In 2015, every Schmalz employee in Germany submitted an average of eleven suggestions. The enthusiastic participation of the employees helps to increase productivity and ensures the competitiveness of the company over the long term.



Number of suggestions for improvement per 100 employees 2011–2015

*Benchmark: Number of suggestions for improvement per 100 employees in companies out of the plant and machinery construction. Source: Idea Management Report in Baden-Württemberg 2012 – Report by the German Institute for Business Administration.



Footbridge with a roof made of photovoltaic collectors

Ecology and Conservation of Resources

Doing business in an environmentally conscious way and using finite resources sparingly are permanently anchored in Schmalz's sustainability strategy. The company fosters these aims by playing a leading role in energy management, development and production of resource-efficient products, promoting an active environmental protection program in and around the company, and ensuring open and transparent communication, which encourages and motivates others to do the same.

Positive Energy Company

Schmalz pursues the strategic aim of being a positive energy company. This means, that the own production of electricity and heat from renewable energy sources and the consumption in the company are in balance permanently. This is achieved by a continuous consumption-oriented expansion of renewable energy sources. Schmalz has also taken innovative measures to reduce energy consumption during operation.

The balance for electricity and heat during the last five years shows that it is possible to bring energy requirements in line with energy consumption permanently.

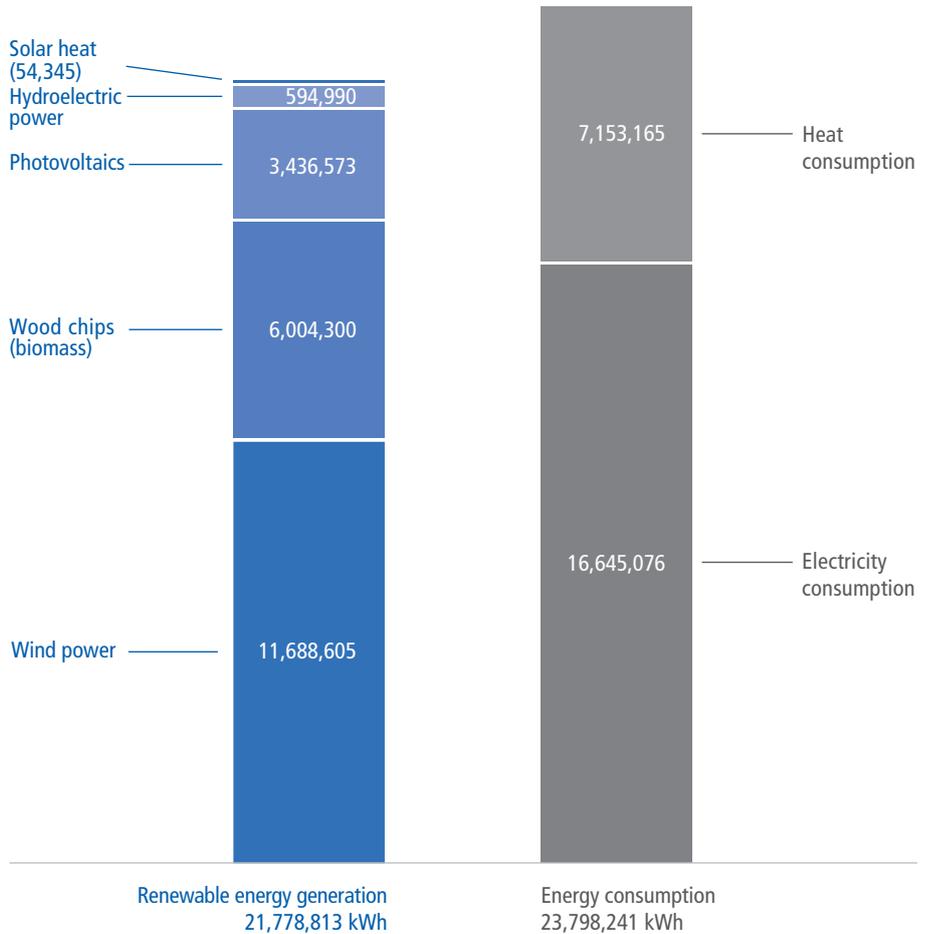


Company-owned hydroelectric power system

Company-owned wind power station

Electricity and Heat Balance

The electricity and heat balance shows a comparison of the energy generated from renewable sources and the energy consumption. The balance sheet shows a congruence of 92 % for the energy consumption in the long-term perspective of five years.



Electricity and heat balance 2011–2015

Renewable Energy Generation

Generating energy from renewable energy sources has been a tradition at Schmalz for decades. More and more new plants are continually being added, for example, the Empfingen solar park in 2015.

The chart adjacent shows the output of currently used energy sources.

| Energy source | Wind power | Photovoltaics | Hydroelectric power | Wood chips (biomass) | Solar heat |
|--|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Energy type | Electricity | Electricity | Electricity | Heat | Heat |
| Used since | 1999 | 2005 | 1910 | 1986 | 1996 |
| Annual energy yield as of 2015 in kWh | 2,503,176 | 1,260,761 | 95,910 | 1,197,800 | 10,869 |
| Location | Glatten* and Dunningen** | Glatten and Empfingen** | Company grounds Glatten | Company grounds Glatten | Company grounds Glatten |

*Within 3 km | **Within about 25 km



High rack storage area with rack feeder

Reduction of Energy Consumption

In addition to the own generation of energy from renewable sources, Schmalz also places great importance on permanently reducing its own energy consumption. Numerous small and large measures at Schmalz are helping the company to use electricity and heat as efficiently and effectively as possible.

Saving Electricity

Electricity is needed almost everywhere in the company, which means there is major potential for saving energy. In order to lower energy consumption, Schmalz has introduced the following measures:

- The braking energy by the rack feeder of the automatic small parts warehouse is retrieved and reused.
- Unneeded electrical circuits are switched off during the night and over the weekend.
- The lighting in office and manufacturing buildings is adjusted in accordance with the amount of available daylight.
- Energy-saving light bulbs are used throughout the company.
- Only very efficient and energy-saving PC, monitors and peripheral devices are bought.
- The company-wide compressed air generation is frequency-controlled and monitored using control software. The compressed air level was reduced by 1 bar.

Load Management System

For further optimization of the energy consumption there was introduced an innovative load management system. This system is used to offset current load peaks. When a load peak occurs, consumers that do not have to remain switched on all the time are shut down (or set to a lower power consumption level) for at least five minutes. This is an effective way to prevent load peaks and also greatly reduces energy costs.

Saving Heat

Schmalz obtains most of the heat that it needs from its own wood chip heating system. However, reducing the heat consumption is still a major priority. There are also taken a number of steps to achieve this:

- The IT server room is cooled using sprinkler water. The heated water is stored in the sprinkler tank. A heat pump is used to extract the heat from the water and give it back to the heating system and washing system at a higher temperature.
- The waste heat from air compressors is routed through a heat exchanger to the heat distributor and washing system. The heat from the factory's exhaust air is also recovered using a thermal wheel and added to the factory's supply air.
- An outdoor air cooling system has enabled Schmalz to reduce the use of air conditioning systems to almost nothing. The buildings are mainly cooled at night using automatic louver windows and skylights as well as fresh air ventilators in the factories. The research and testing center, newly built in 2014, is air-conditioned using geothermal cooling from the bedrock. An extraction system that is installed centrally at the machining tools in the production hall reduces the amount of atmospheric pollution and heat input in summer.
- Low-temperature heating is also used in the office and production buildings.
- The 40,000-liter buffer storage for the wood chip heating system helps to store heat for a longer period of time. This means that the heating system does not have to perform as many cycles of operation and its efficiency is therefore improved.
- The central control for heating, ventilation and cooling ensures that the systems are optimally tuned to one another.
- The north-facing shed roofs that are built onto the office and production buildings provide for optimal light levels and protect against heat in summer. They also form the substructure of a photovoltaic system.
- The overall energy performance of the production and logistics buildings, which are physically connected to one another and cover an area of close to 14,000 square meters, is approximately 57 % better than required by the German Energy Savings Ordinance.



Company-owned wood chip heating system with roof greening

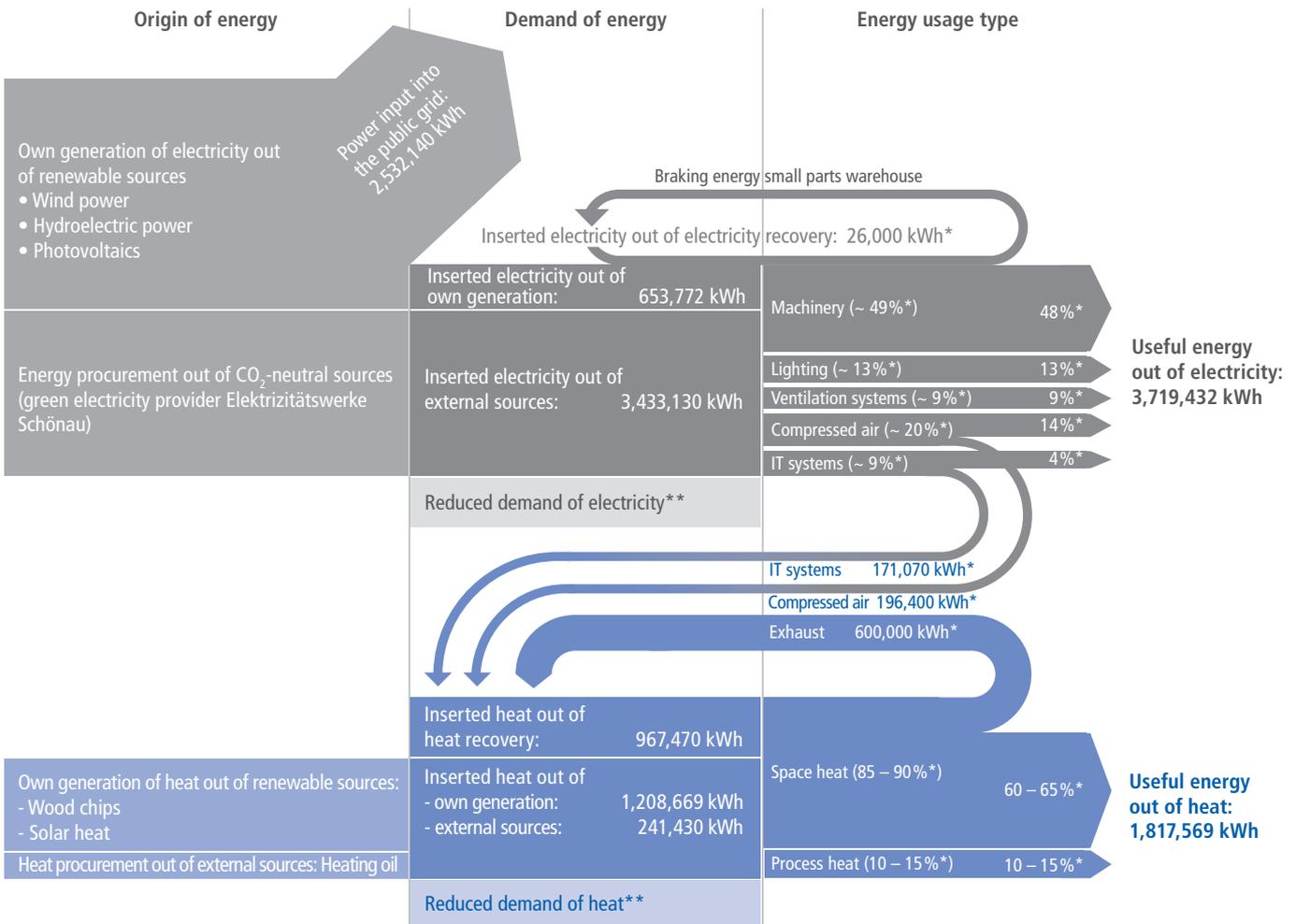
Buffer storage for wood chips

Energy Self-Sufficiency

Whenever it is technically possible and economically sensible, Schmalz supplies its own electricity and heat directly from its own energy sources. Since the amount of electricity from renewable sources does not always correspond to the amount of electricity required, some of the self-generated electricity is fed into the public grid or electricity is brought in from an external provider. To this end, Schmalz has worked with the "Elektrizitätswerke Schönau" utility company, which has received many awards as a provider of clean, CO₂-neutral green energy.

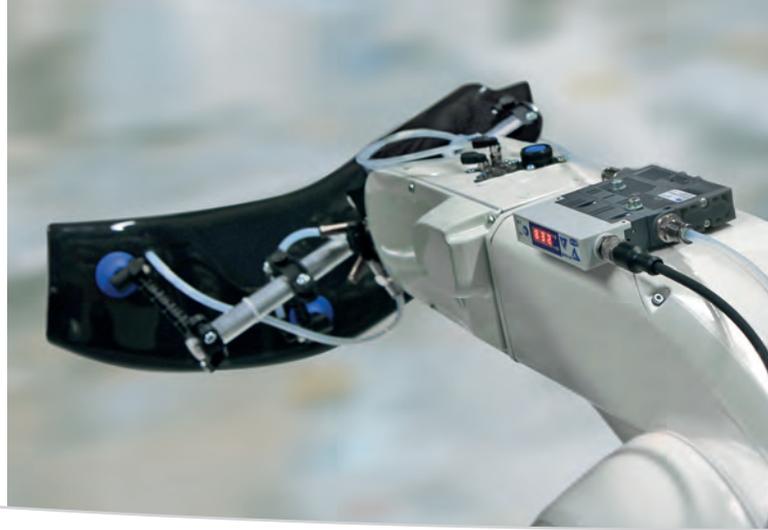
Degree of Energy Self-Sufficiency at J. Schmalz GmbH.

| | | |
|--|----------------------|----------------------------------|
| Fulfillment of demand through own generation | 1,862,441 kWh | 43.7% Energy Self-Sufficiency |
| Fulfillment of demand through recovery of heat and electricity | 993,470 kWh | |
| Fulfillment of demand through external procurement | 3,674,560 kWh | |
| Sum of energy demand | 6,530,471 kWh | |



Energy flows of J. Schmalz GmbH in 2015

*Approximation | **Measures see page 10



Efficient product operation with the Schmalz compact ejector SCPSi

CO₂-neutral Production

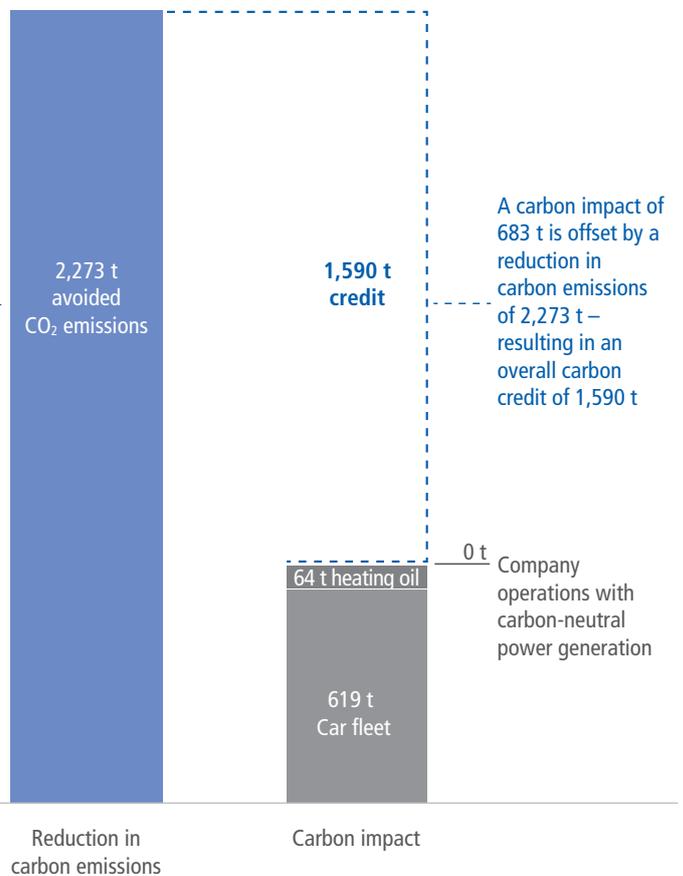
As a manufacturing company, Schmalz is pursuing a clear goal of keeping limited the environmental impact of its business activities as much as possible. The company is especially interested in minimizing its own carbon footprint.

Schmalz is setting standards in this area for the manufacturing industry. By using energy from renewable internal and external power supplies, a large percentage of the energy consumed remains carbon-neutral. The supplementary fuels and heating oil emitted a total of 683 metric tons of CO₂ in 2015; however at the same time, the wind and photovoltaic energy that the company fed into the grid prevented 2,273 metric tons of CO₂ emissions, which would otherwise have been caused by conventional generation of electricity.

In 2015, Schmalz had a positive CO₂ balance and prevented a total of 1,590 metric tons of the harmful greenhouse gas from entering the atmosphere.

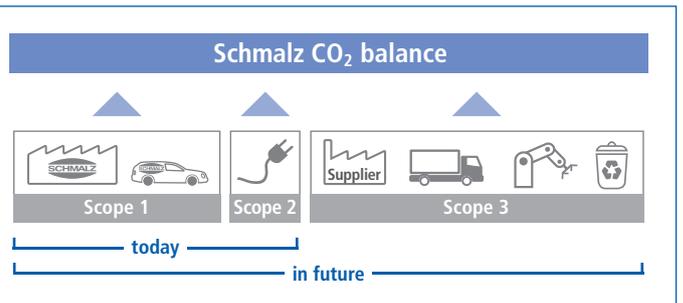
Note: The calculation factors that are used correspond to the recommendations from the German Federal Environmental Agency, the German Emissions Trading Authority, and the emissions report of the Federal State of Bavaria

Through feeding regeneratively generated power into the public grid, Schmalz was able to save an environmental load of 2,273 t CO₂



CO₂ balance 2015

Schmalz's CO₂ balance is based on the limits established in the Greenhouse Gas Protocol by the World Resources Institute and the World Business Council for Sustainable Development. All influencing factors as prescribed in Scope 1: "All direct greenhouse gas emissions" and Scope 2: "Indirect greenhouse gas emissions from consumption of purchased electricity, heat or steam", are currently being implemented. For the coming years, Schmalz plans on expanding the CO₂ balance limits to include Scope 3: "All other indirect emissions along the value chain (including operation and disposal of products)".

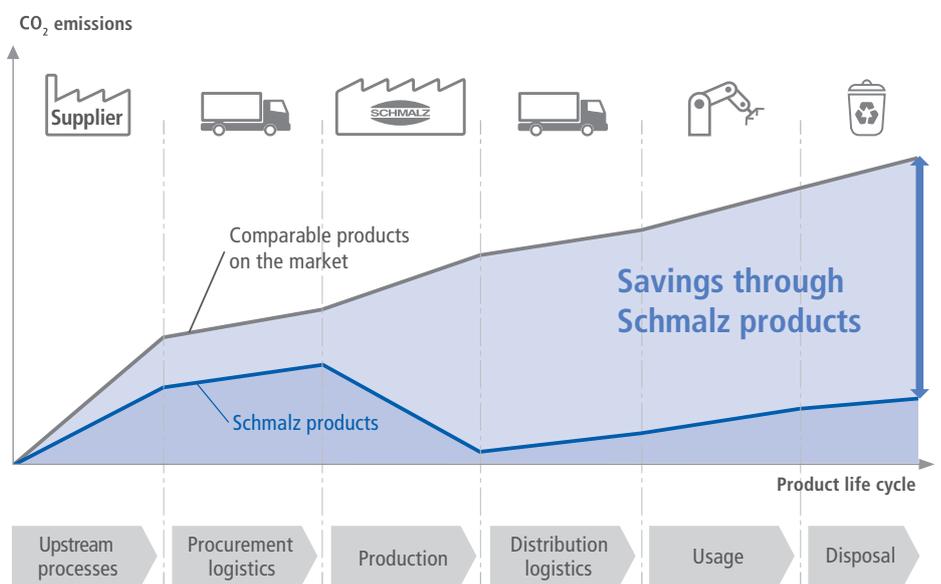




Logistic area inside the production building

Resource-Efficient Products

At Schmalz, efficient use of limited resources (such as materials and energy) is a central business objective. In this regard, Schmalz places the main focus on its products: in addition to groundbreaking innovation, top quality, and maximum energy efficiency, the carbon footprint of a product is an important gauge of its resource efficiency. Schmalz minimizes the factors that influence product carbon footprint in all phases of the product life cycle. The carbon impact of a Schmalz product is therefore less than that of comparable products on the market.



Development of CO₂ emissions during the product life cycle (Product Carbon Footprint)

Product Creation

The CO₂ emissions that occur during the creation of a product are in large part subject to the design features of a product. For example, the materials and production techniques that are used and the energy that is later required are already determined during the development and design of a product. The main factors that influence the product carbon footprint have already been determined long before production of the first part begins.

During product development, Schmalz relies on state-of-the-art methods. Design variants are analyzed and compared in order to reduce the percentage of energy-intensive materials and production processes. When new products are being developed, clear environmental objectives are already defined in the functional specification – for example, by specifying energy values.

The manufacture of a product at Schmalz includes all processes that can be attributed to the value creation process, which also includes upstream processes. For this purpose, Schmalz routinely audits its suppliers, trains and advises them on matters of resource efficiency, and directly involves the most important partners in its

own manufacturing process in the context of the Schmalz Value Creation System. This makes it possible to procure purchased parts and assemblies that already have a low carbon impact.

Since Schmalz's production process is already carbon-neutral, the product carbon footprint is not further increased during the manufacturing process. If the entire company's net reduction in carbon emissions is also taken into account, the Schmalz products are even exempt from the bulk of the carbon footprint that has been incurred up to that point.

The logistics processes are also examined and optimized. On the procurement side, Schmalz is increasingly relying on regional suppliers. This eliminates unnecessary transport distances. Schmalz uses climate-neutral shipping methods such as GoGreen shipping from DHL to transport the product to the customer.



Package handling with the aid of the Jumbo vacuum tube lifter

Example of Resource-Efficient Product Creation

Making good things even better – this is one of the most important aims of product development at Schmalz. For example, the basic ejector SBPL works with highly efficient eco nozzle technology. This results in maximum energy efficiency in the handling of airtight and porous workpieces – as well as a much higher suction rate compared to its predecessor SEM. Air consumption and sound level are significantly lower for the SBPL.

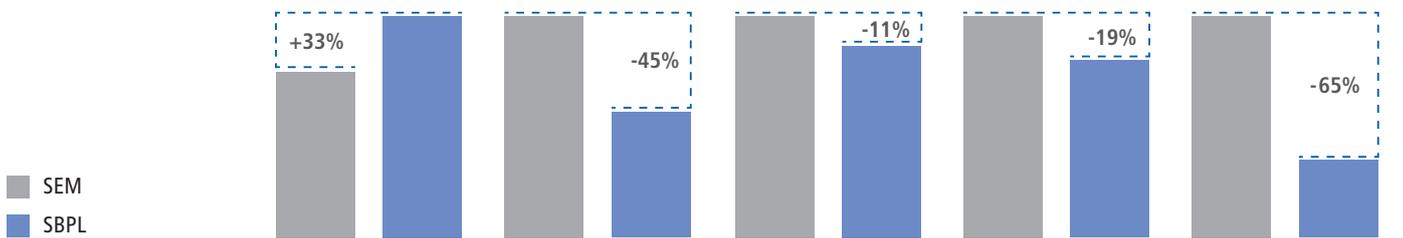
And in use of materials the SBPL convinces as well: Instead of aluminum, body and nozzle system of the new basic ejector will now be made of extremely robust, lightweight plastic. The variant with 0.8 kg is approximately 45 % lighter than the SEM. Thanks to the modular product design, the SBPL vacuum generator is fast and simple to maintain. And also a look at the CO₂ balance is worthwhile: savings in material and weight improve the balance sheet by around 65 %.



Previous vacuum generator of the type SEM



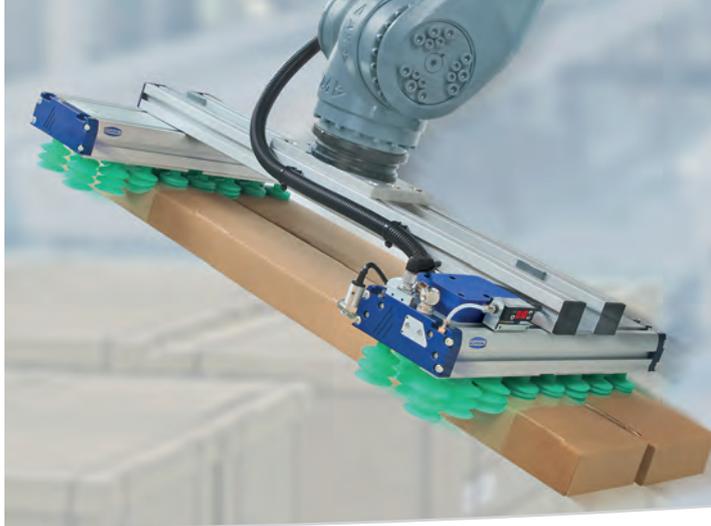
New vacuum generator of the type SBPL



| | Suction rate at 4.5 bar in l/min | Weight in kg | Air consumption at 4.5 bar in l/min | Sound level in dB | CO ₂ balance in kgCO ₂ e* |
|-----------------------|----------------------------------|--------------|-------------------------------------|-------------------|---|
| Vacuum generator SEM | 75 | 1.4 | 180 | 80 | 15.65 |
| Vacuum generator SBPL | 100 | 0.8 | 160 | 65 | 5.41 |
| Saving | 33 % | 45 % | 11 % | 19 % | 65 % |

The SBPL convinces with more power at lower resource consumption, increased benefits and a significantly improved CO₂ balance compared to the SEM.

*The CO₂ equivalent (CO₂e) includes, in addition to CO₂, other gases which are responsible for the greenhouse effect. For the CO₂ equivalent their effectiveness for the greenhouse effect is converted into carbon dioxide.



Automated handling of cardboards with the Schmalz area gripping system FXP



Important process data is available on the smartphone or tablet

Product Operation and Industry 4.0

When operating products in the field of vacuum technology, it is especially important to use the resources of compressed air and electricity in an efficient manner. Schmalz designs its products so that the only energy consumed is needed for the actual handling operation.

Energy consumption during downtime is prevented. Intelligent products also allow for process communication with the user's control systems in order to adjust all process parameters for energy-efficient operation.

The basis for such functions is that all relevant process data is available in real time. Schmalz provides an entire range of so-called smart field devices for this purpose: They are fitted with comprehensive energy and process control functions, they gather and store data and make it available in the network. With the aid of their diagnostic and forecasting functions, they derive information regarding the condition of the unit and detect subtle changes or imminent malfunctions. With products such as these, Schmalz supports its customers heading towards Industry 4.0 – the switch to the intelligent factory. The steadily increasing networking inherent in this is resulting in a break up of traditional automation pyramids. The emphasis is now on vacuum generators, like the compact ejector X-Pump, within an automation cloud in which intelligent devices and services communicate with each other and organize themselves.

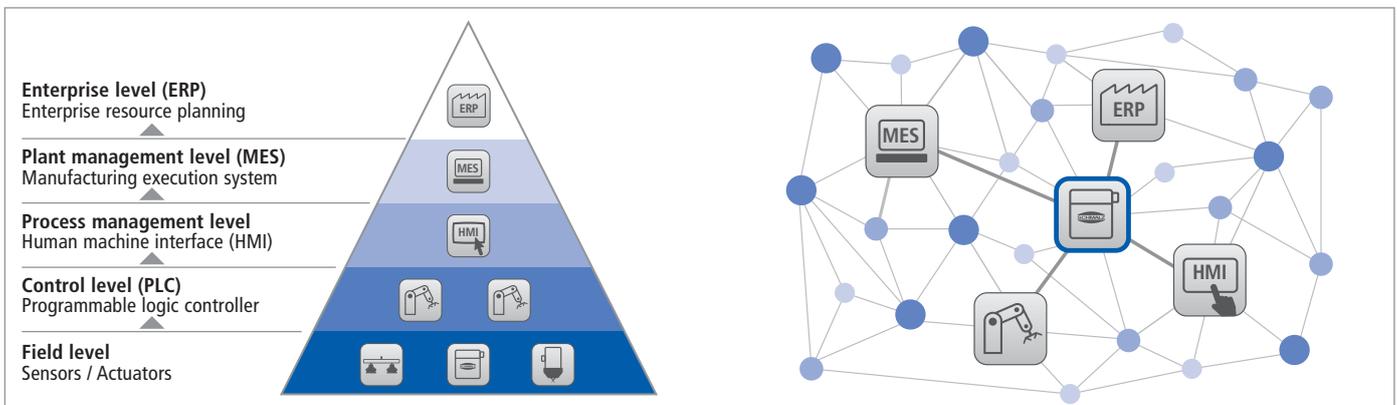
Energy and process control in vacuum ejectors

The integrated energy and process control in the compact ejector X-Pump from Schmalz ensures efficient product operation and efficient control of the overall process. This technology measures, monitors, and optimizes all energy and performance-relevant parameters in the entire vacuum system. Automated processes can therefore be optimized to ensure maximum productivity.

The innovative energy monitoring function guarantees optimal energy consumption throughout the system. The system status is monitored using condition monitoring, which greatly increases system availability. Finally, predictive maintenance improves the performance and quality of the gripping system.

Intelligent vacuum and pressure switch VSi

With the new VSi vacuum and pressure switch, Schmalz is demonstrating how intelligent field devices can be used to support more efficient process design. This switch not only monitors excess pressure and vacuum pressure in automation and handling systems, but it also provides the users with important data. For example, thanks to NFC (Near Field Communication), process settings and the operating instructions can also be displayed using a smartphone or tablet – for reading directly at the plant, with no wires, in a few seconds, and in a user-friendly format.



Hierarchical architecture in the traditional automation pyramid and future communication in the automation cloud



Gripping system for handling glass tubes

Vacuum Handling Without an External Energy Supply

The modular vacuum lifting device VacuMaster Eco allows for vacuum generation without an external energy supply. The vacuum is generated and dissipated by the lifting and lowering force of the chain hoist that the VacuMaster is attached to. This eliminates the need to operate an external vacuum generator and also reduces operating costs. In a technology study, Schmalz also applied this principle to a wide variety of grippers in automated handling processes.



Vacuum lifting device VacuMaster Eco without external energy supply

Radio Remote Control for Vacuum Tube Lifter

The vacuum tube lifters Jumbo can be equipped with radio remote control SRC. This allows to use the operating unit to switch the vacuum generator on and off during work breaks. Through the use of energy harvesting no external energy required for radio control is needed. The energy is recovered via the piezoelectric effect (pressing the button) or photoelectric effect (integrated solar cell) and is converted into a radio signal. When operating a tube lifter with the radio remote control SRC it saves up to 40 % in energy.



Radio remote control SRC for vacuum tube lifters

Product Usage After the Utilization Phase

To complete the product life cycle in an efficient way, attention is paid to the separability of the individual materials when the product is first created. For example, the elastomer part on special suction cups can easily be separated from the aluminum connecting part. Since the elastomer is a part that is subject to wear and tear, it can easily be replaced without having to purchase a completely new suction cup. Separating the two components also allows for proper disposal of both materials.



System design of a recyclable suction cup



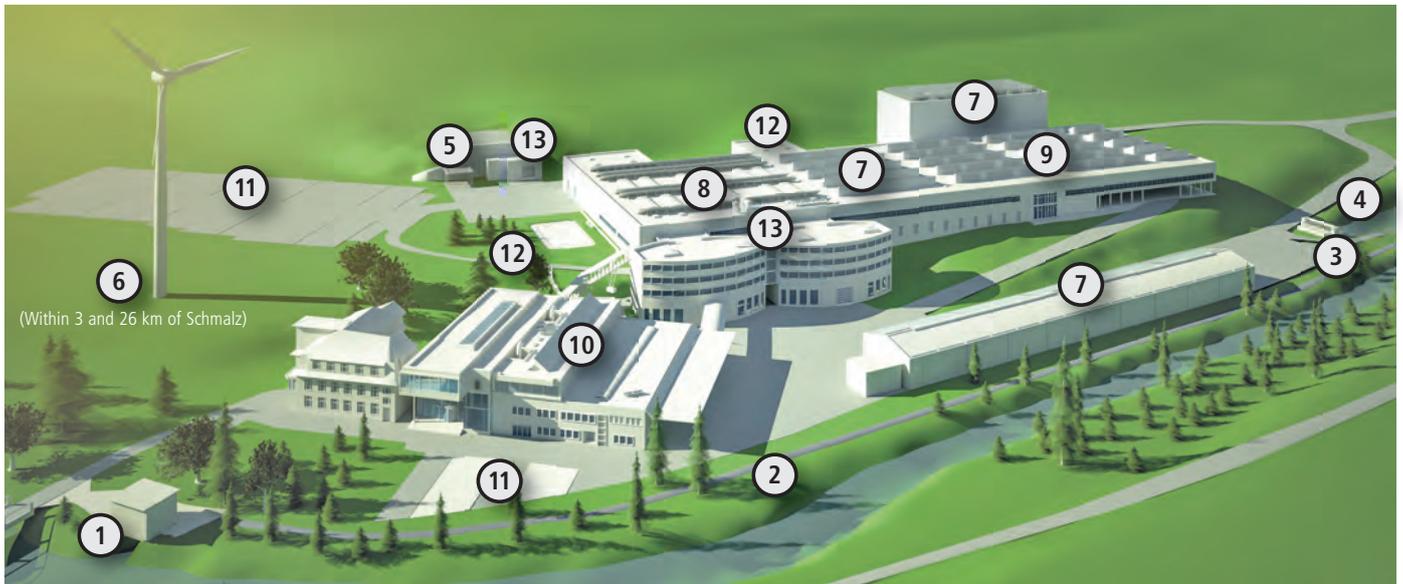
Schmalz e-Golf and electric car of an employee at the Schmalz charging station

Loop trail through the Schmalz ecological guided tour

Environmental Protection and Communication

Measures for environmental protection on the J. Schmalz GmbH's company grounds in Glatten

The miscellaneous measures to protect and preserve an intact environment can be found at many places on the company ground from Schmalz. Environmentally-friendly methods are also emphasized in operational processes.



- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Hydroelectric power station with charging station for electric vehicles from the Schmalz car fleet, from employees or from the public 2 Loop trail through the Schmalz ecological guided tour 3 Biotope with intake structure for hydroelectric power station 4 Retention basin for rainwater 5 Wood chip heating system for heating rooms 6 Wind power station (within 3 and 26 km of Schmalz) | <ul style="list-style-type: none"> 7 Photovoltaic system for generation of electricity 8 Ventilation of production halls including heat recovery 9 Northern light shed roofs to reduce thermal load 10 Solar heating system for hot water generation 11 Parking area with grass pavers for reducing surface sealing 12 Cistern for rain water utilization 13 Roof greening |
|--|---|

Ecological Guided Tour

Schmalz established an ecological guided tour in 2003 to inform the public about the variety of measures implemented. Schmalz presents these environmental protection measures on guided tours and encourages interested companies and private individuals to follow suit. In 2009, the ecological guided tour was named the "Selected Landmark of 2009" by the "Germany – Land of Ideas" initiative. Registration and further information:

www.schmalz.com/ecological-guided-tour

Sustainability days in Baden-Wuerttemberg

In June 2015, Schmalz took part in the "sustainability days" event in the German state of Baden-Wuerttemberg. The patron of the sustainability days is the Minister-President of Baden-Wuerttemberg, Winfried Kretschmann. Companies, clubs, associations, and other organizations across the state presented their activities related to sustainability. Schmalz invited the public to a tour of the ecological trail. The tour was a success: Many inspired visitors were impressed by the company's comprehensive commitment to the topics of ecology, economy, and social engagement.



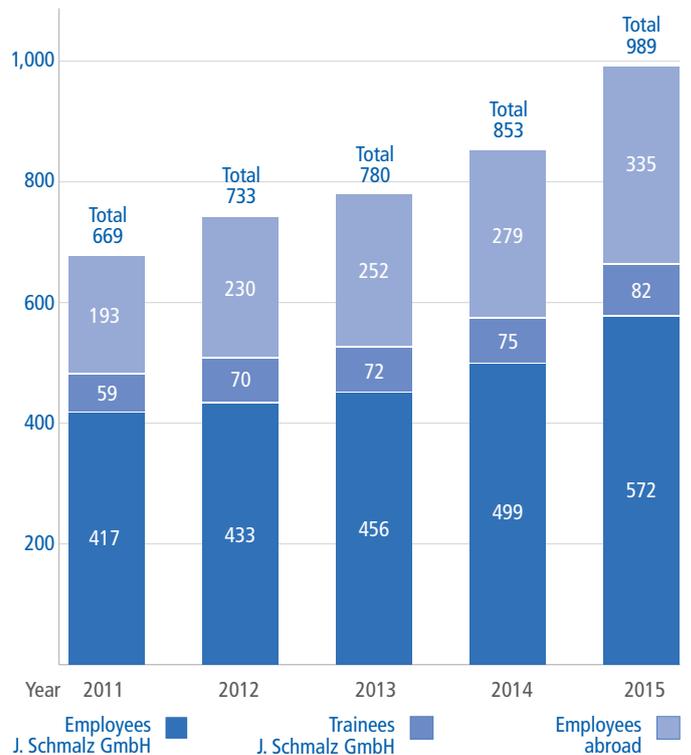
Internship at Schmalz

Social Engagement

At Schmalz, taking on social responsibility is an important part of the company strategy on par with reaching business objectives or using resources in an environmentally conscious manner. Along with the local community, the company's own employees benefit in particular from Schmalz's engagement.

Employees

The fact that Schmalz is a growing company is made clear by both the rising sales figures and the increasing number of employees:



Employees 2011 – 2015

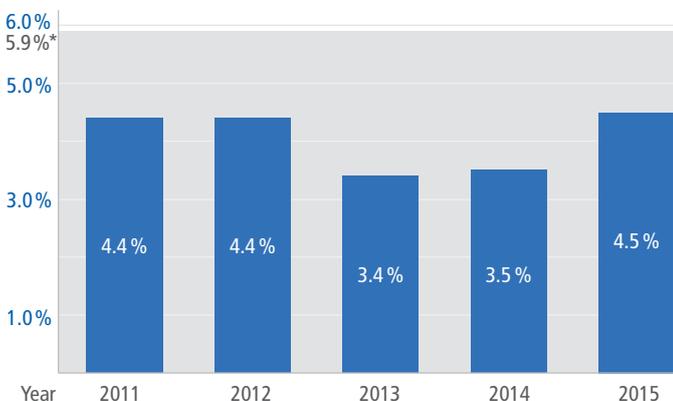


Participants of the Technolino project in the kindergarten in Glatten



Schmalz Trainees at the Career Information Day

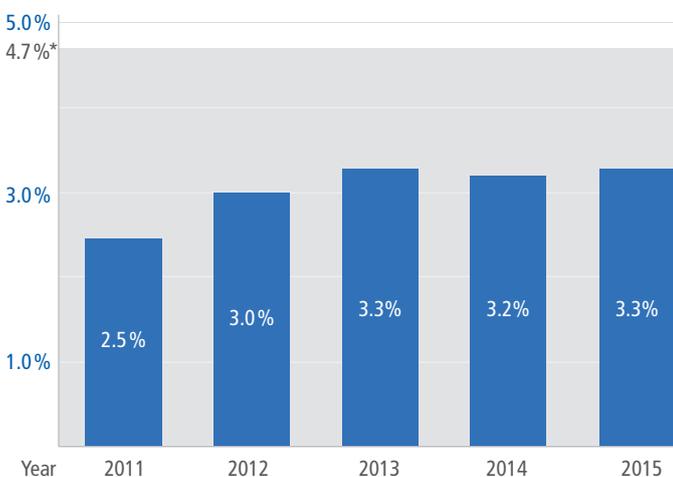
Excellent working conditions and extraordinary benefits such as profit sharing or retirement plan not only increase the motivation of employees but are also reason for a low employee turnover.



Employee turnover 2011 – 2015

*Benchmark: Sum of terminations and other cancellations in the mechanical engineering industry in Baden-Württemberg in % of all employees (median 2012). Source: Baden-Württemberg's employers state association

Schmalz supports the physical and mental health of its employees with a variety of measures. Together with ergonomically designed workplaces that lead to a significantly lower number of ill employees compared with the mechanical engineering industry.



Status of employee's illness 2011 – 2015

*Benchmark: Illness rate in % of all working days in the mechanical engineering industry in Baden-Württemberg (median 2012). Source: Baden-Württemberg's employers state association

Training for Securing Junior Staff

Apprenticeship and Studies

Training for young people is an important part of employee development at Schmalz. The company currently has 20 cooperative education students and an additional 62 apprentices in technical and commercial professions. This is a training rate of approximately 13% of all of the permanent staff at the headquarters in Glatten, which is far above the German national average. Schmalz trains the young people with the objective of employing them once their training is complete. Out of all the current employees, 20% have received their training at Schmalz.

Partnership with Schools

To ensure that there is a pool of well-educated employees in the future, it is important to awaken the interest of young people for apprenticeships or cooperative education programs in the company at an early age. For this reason, Schmalz visits schools in the region on a regular basis to inform them about the possibilities at Schmalz. There are a number of official, permanent partnerships with different schools. For example, Schmalz is involved in a Student-Engineer-Academy-Project with the Technical Secondary School in Freudenstadt.

Each year Schmalz opens its doors for the career information day. This is where interested young people can get a look at the company and the operational processes during training. As a co-founder of the "jugend-technik-schule", a technical education program for children in the Freudenstadt district, Schmalz offers various courses in the field of vacuum technology. Through trainees and pedagogically trained supervisors children and adolescents get a look at the technical professional world in a playful manner. In the Glatten kindergarten, Schmalz also supports the "Technolino" project, which is intended to introduce children to technology and natural sciences at an early age.

Training Initiative

In 2006, Schmalz began a training initiative for the district of Freudenstadt (www.ausbildungsinitiative.org). Along with special education centers, vocational schools, and companies from the region, Schmalz offers training positions for a career as precision metalworker. The content of the training is specially geared towards the needs of young people with learning disabilities and is accompanied by additional measures that are performed alongside the apprenticeship.





Local recreation in the Schmalz garden

Benefits Provided by the Employer to Acquire New Employees and Enhance Employee Loyalty

Schmalz provides its employees with all-around support. LIFE+ is a comprehensive benefits package that addresses all areas of employees' lives – so everyone has the possibility to participate and benefit.



Finances & Security

In addition to job security, employees at Schmalz benefit from an innovative pay program that includes bonuses for team and company successes, profit sharing, and a pension plan that goes well beyond the legally prescribed benefits.

Future Prospects & Education

In terms of career prospects, the company offers a number of programs for the development of junior employees and managers. Alternate career paths were also introduced in the area of functional and project management. In order to enable employees to pursue advanced training while continuing to work, the Schmalz Academy, the company's in-house training center, offers more than 200 courses in a wide range of subject areas.

Health & Wellness

Modern, well-lit workplaces and a recreation area on the company grounds help to promote health and wellness. In addition to numerous sports and health courses, Schmalz has also set up a massage room, where employees can be treated by qualified physical therapists. To ensure their spiritual well-being, employees can draw on the services of experienced life counselors, which are provided free of charge and on an anonymous basis.

Family & Leisure Time

The company encourages a healthy work-life balance by offering flexible working hours and the Schmalz Kinderwelt, a day care center for small children which is located close to the company. A wide range of hobby and recreational classes, company parties with the entire family, and team events within the departments help to promote a feeling of unity among colleagues.



It's all about "Patty cake" at the Schmalz children's holiday program



Beach volleyball on the company grounds

New communication center for visitors and employees

The new communication center for visitors and employees represents a quantum leap in the company history of Schmalz. The building was officially opened in May 2015.

With this new building, Schmalz now greets their guests in prestigious premises spanning a total of 2,200 square meters. The new building comprises three stories with a wide glass facade, a terrace and a sun room. The transparent room layout reflects the open communication culture of the company.

On the first and second floors, spaciouly designed conference rooms with the latest IT infrastructure offer lots of room for intensive discussions. On the third floor, employees have access to a top-quality company restaurant. Every day, the kitchen staff prepares three freshly-made dishes using locally sourced ingredients.

The modern energy concept means that the overall energy efficiency of the building is 50 percent below the level required by the German Energy Saving Regulation. Schmalz forges links to the natural environment of the area: The building is cooled with water from the nearby Glatt river and is heated in winter with wood chips from the region. Schmalz has relied on natural building materials, such as wood from local silver firs, for the interior construction.



Society

Schmalz is also committed to society and the local community. The company engages its employees in social activities and encourages them to be active in their private lives.

Several typing drives in the company have enabled employees to register free of charge in the German bone marrow donor database. Employees also took part in the 2015 "Christmas in a shoe box" campaign, in support of children in need around the world.

Trainees also help Schmalz to extend its social commitment into the community on a regular basis. In the summer of 2015, they built two stone changing rooms in the open-air natural swimming pool in Glatten. This work was a part of Schmalz's participation in the sustainable business initiative of the state of

Baden-Württemberg (WIN). Each year, Schmalz supports a local cause within the WIN project. The Kindergarten in Glatten also received active help from Schmalz trainees in a recent renovation project. The trainees created new play walls for the child care center Schmalz Kinderwelt.

Schmalz's social engagement also includes providing financial support to local clubs and public institutions, in the form of sponsoring club and student newspapers, as well as more general sponsorship activities. Instead of giving gifts to its business partners, Schmalz traditionally donates to the German Cystic Fibrosis Association to support research and the advancement of therapy in the field of cystic fibrosis.



Wolfgang Schmalz (right) and Minister for the Environment Franz Untersteller at the signing of the WIN Charter

Engagement in Interest Groups and Networks

Schmalz represents its conviction and commitment to sustainability far beyond its company. Therefore Schmalz is member of various committees, interest groups, best practice groups and networks.

- Schmalz has been a member of the Business Initiative for Sustainability since 2010. This also includes participation in the advisory council of the federal state government for sustainable development and membership in the sustainability conference of the federal state of Baden-Wuerttemberg. In May 2014, Schmalz was one of the first companies to sign the WIN Charter. This is a clear statement of the company's commitment to the twelve guiding principles and goals of sustainable business. The guiding principles of the include, for example, the long-term safeguarding of the company's success, the use of renewable energies, the support of employees as well as a clear focus on innovative and sustainable products.
- Schmalz is part of the Climate Protection Companies group since 2010. This excellence initiative sponsored by the Federal Ministry for the Environment, the Federal Ministry of Economics and Technology and the German Chambers of Commerce and Industry (DIHK) honors companies for their climate protection efforts and operational energy efficiency.
- From 2011 to 2012, Schmalz was one of the experts who took part in the Federal Chancellor's discussion regarding Germany's future.
- Schmalz has been part of the "Economy Pro Climate" initiative since 2013. With the publication of best practice examples from various business areas, members from other companies are providing valuable tips for the implementation of climate and environmental protection measures.
- Schmalz is involved in a wide range of networks. Employees of the company use these platforms regularly to exchange views on various technical and business issues. Schmalz also works closely with institutes. Especially in the development of new technologies and products the experiences within the network is a valuable asset. There are numerous educational partnerships with colleges and universities in which students actively participate in business projects of Schmalz. Thus, the students are already learning to deal with the acquired knowledge in a practical way during their studies. Schmalz benefits primarily from latest trends and imaginative impulses.





Awarded for the best innovation system in German Industry

Numerous children visited Schmalz during the open house day for the "Mouse TV"

Measures and Projects 2015

All around the Schmalz ecoSYSTEM, the company develops its measures and activities continuously in all target areas of sustainability. The energy efficiency is increased annually. Sustainable work is understood as a permanent process. In the reporting year 2015, a large number of projects were carried out to further complete the sustainability measures of Schmalz.

| Area of sustainability | Measure | Implementation |
|------------------------|--|---|
| Economy | A3 Reception Building – Communications center for visitors and employees Reception building with company restaurant | The building was officially opened in May 2015. Besides conference and meeting rooms, this is also used to accommodate HR and a company restaurant. |
| Economy | Security Award From the State of Baden-Wuerttemberg | Schmalz has been awarded the "Baden-Wuerttemberg Security Award" for its IT emergency management system. |
| Economy | VSi vacuum and pressure switch Transparency in a new dimension | With the new VSi vacuum and pressure switches, important process data can now be viewed on mobile end devices such as smartphones or tablets. |
| Economy | German industry innovation award Best Innovation System | Schmalz has been awarded the prize for "Best Innovation System" in German Industry. The jury described Schmalz as a "conveyor belt of innovation". |
| Ecology | Axia-Award Award for sustainable management | In February 2015, Schmalz was presented with the Axia award for sustainable corporate management. According to the jury, Schmalz stands for open communication, a high degree of identification with the company among employees, and for flat hierarchies. |
| Ecology | Empfingen solar park Photovoltaics plant supplies electricity to more than 200 four-person households | In March 2015, Schmalz started up a solar park in Empfingen, Germany. The plant saves 630 tonnes of carbon each year. |
| Ecology | Eco nozzle technology Roll-out to further products including the SBPL basic ejector | The new eco nozzle technology has a high suction capacity with low air consumption which further increases the efficiency of vacuum generation. |
| Social Engagement | Great Place to Work Germany's best employer | In March, Schmalz was once again awarded as one of the best employers in Germany – for the fourth time following our awards in 2004, 2009 and 2012. |
| Social Engagement | Fitness room Investment in the health of our employees | Since December 2015, a fitness room for sports classes and training on a variety of equipment has been available for employees to use. |
| Social Engagement | Flinc 1st anniversary | The ride-share network Flinc celebrated its first anniversary in July 2015. At the time of the celebrations, the lift share concept had already resulted in a total saving of 1,200 kg of CO ₂ . |
| Social Engagement | Girls in "Men's" jobs Participation in national Girls Day | On Girls' Day, female school pupils spent the day at Schmalz getting to know the company and learning about technical training occupations. |

Prizes and Awards

J. Schmalz GmbH has received numerous awards in a variety of areas, extending from environmental protection to the company's excellent working environment and its innovations. In addition to innovation prizes for its products, the company has also received awards for its innovative processes.

German Industry Innovation Awards (2015)
Awarded "Best Innovation System"

Germany's Best Employer (2015, 2012, 2009, 2004)
Prizewinner in the category "Great Place to Work"

Baden-Wuerttemberg Security Prize (2015)
Award for IT emergency management

Axia Award (2014, 2009)
Award for sustainable company management (2014)
and excellent human resource management (2009)

Green Blue Energy Factory Award (2014)
European award for the production of energy out of
renewable sources, unique "GBE Demo Factory" in Germany

Climate Workshop 2.0 (2013)
Award for trainees about the successful exposure of
energy saving potential inside the company

Best Assembly Idea (2011)
Award for the innovative assembly workstation
"Pick-by-Shutter"

VR Innovation Award (2010)
Prize for the development of the Schmalz Wafer Gripper SWG

Excellent Knowledge Organisation (2009)
Prize for special knowledge management in small and
medium sized companies

365 Landmarks in the Land of Ideas (2009)
Award for the Schmalz ecological guided tour as
"Selected Landmark of 2009"

Socially Committed (2008)
Award for social engagement in small and medium
sized companies

European Solar Prize (2007)
Prize for owners or operators of systems for using
renewable energies

The Dr. Rudolf Eberle Prize (2006)
Award for the innovation of the compact ejector X-Pump

Ethics in Business (2005)
Award for exemplary social and ecological engagement

Ecological Manager of the Year (2004)
Award for Dr. Kurt Schmalz and Wolfgang Schmalz as
"Ecological manager 2004"

**BDI Environmental Prize and Green Week Award
of the European Union (2004)**
Award for environmental protection in the company

Environmental Prize for Companies (2000)
Award for special efforts in environmental protection

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