

Air with method

Specialized solutions for the recycling industry



We make air work on your behalf



Air is the medium we work with. Research and development, planning and consulting, manufacturing and service, whatever we do, the emphasis is on innovative air technology. Venti Oelde plants and components are used for collecting, handling and filtering of air, vapours, gases, dust and airborne solids.

An enthusiastic, experienced and knowledgeable team, numbering 270, ensure that individual customer requirements are implemented under economically expedient aspects. The resulting solutions are innovative, efficient, cost-effective and forward-looking. They are appreciated all over the world and underline the claim to technological leadership.

As long ago as 1930 Venti Oelde was planning, developing and manufacturing in their North-Rhine-Westphalian location, Oelde. Apart from industrial fans, their manufacturing programme includes dust collection and process gas cleaning plants, exhaust air treatment plants, ventilating, heating and air-conditioning plants, recycling and waste treatment plants as well as plants for surface technology.



The conceptual range of available industrial fans includes high-efficiency fans to handle gas and dust and heavy-duty fans for dust-laden process gas or clean air. These also number specially designed fans to circulate hot gas with a temperature to 1000 °C and high-pressure fans to handle gas, dust-free air, chips and other material.

The field of dust collection technology includes the capture, handling and filtering of dust or solid particles out of air and process gases. The primary elements of the quotation are the planning, manufacture, assembly and commissioning of air-handling plants using a variety of separating systems which are selected to meet the individual need.

Extraction of welding fumes and vapours and exhaust from baths and of heat produces a good "working climate". Venti Oelde develops total solutions for workplaces, booths, rooms and workshops of all sizes.

In the business segment heating and air-conditioning technology, air heating systems, ventilating plants with heat recovery and air-conditioning plants for workshops and other industrial areas of all sizes are planned, manufactured and installed.

Venti Oelde supplies treatment systems downstream of large shredders, mills and incinerators for recycling plants for material separation and the recovery of reusable waste as well as dust collection plants and air management concepts for waste treatment plants.

Venti Oelde supplies complete systems to dry surface applications to a wide variety of materials. As a result of many years working with partners in the relevant branches, specially developed drying systems can be integrated into complete surface treatment plants.

Maintenance, servicing, inspection, repairs as well as plant upgrading, rationalisation and enlargement complete the available services. Experienced specialists in a large number of outside offices and agents ensure expert support all round the world and quick contact to all business partners.

Conveying plants for waste disposal and recycling

Production waste or waste of one type represent a great resource potential if they are properly recycled. Venti Oelde has taken up the cause of processing waste before it is transferred to a recovery facility.



Great emphasis is placed on hygiene in the food-processing industry. For the drinks industry, for example, PET bottles are treated in our suction type PET bottle conveying plant. This makes it impossible for residual liquid or contaminated air to leak from the pneumatic conveyor system.

Fundamental to all Venti Oelde conveying and disposal systems is the wish to supply individually designed plants to provide the greatest possible flexibility where only a small space is available in production.



The discharged waste is compressed in bale or container presses. Dust from the filter plants is collected in big bags or compressed to briquettes or pellets.

We handle and recycle plastics, cellulose, paper, cardboard, veneer, aluminium, textiles and secondary fuel. Via a change-over device it is possible to feed the material into the production process or to discharge it from the complete system on a reversing conveyor belt.



Special separators are used to sort the conveyed material according to the specific requirement. These are appropriate to the type of material which is being processed.



Our plants convey bottles and labels from the label-stripping machine to the appropriate disposal location, where they are compressed and can be transferred to a facility where further processing takes place. The same applies to bottle tops. We are even able to generate two different products – the aluminium tops and the PE bottle tops.



Peripheral plants downstream of large shredders

Large shredder plants have today acquired an important role in the recovery of iron and steel scrap. Machines with main drives of up to 7000 hp can process not only whole car bodies but also light to heavy mixed scrap and similar material.

Venti Oelde has planned and constructed complete air-handling systems and processing plants downstream of the shredder, meaning the complete peripheral plant, countless times.

We rely on our pressure-shock-resistant wet scrubbers to collect dust from the shredder. They can withstand an explosion pressure of up to 3 bar.



As well as the complete engineering, Venti Oelde has been providing all services, including acting as general contractor for complete plants, since the introduction of large shredders to Europe in the Sixties.



The scrubber is characterised by a particularly intensive scrubbing property in a venturi pipe. The high velocity of the gas-stream in the venturi throat causes an extremely fine dispersion of the washing liquid. The water mist and dust particles meet in particularly intensive contact so that the particles are humidified and adhere to the liquid. Downstream of the venturi pipe there is a counter-current scrubber, in which the water droplets with the dust particles contained in the gas-stream are washed out. The scrubbing water can be re-used after it has been treated by means of drum screen and sludge dredger.



Windsifters, using re-circulated air, are used to clean the mainly ferrous metal scrap for large feed volumes up to 200 t/h. Up to about 90 % of the air is recirculated. The result is a good ferrous scrap quality and low environmental pollution achieved by considerably reducing the volume of air and dust load leaving the equipment.



Pivotable discharge belts are used to discharge the ferrous fraction so as to obtain a large stockpile volume.

Special lifting magnetic drums separate the iron fraction from the non-ferrous metals and heavy waste material.



The waste fractions are automatically discharged from the conveyors directly into containers. All conveyor belts for transport of the shredder fluff are covered and can be equipped with additional dust extraction.



Extensive metal recycling systems

Venti Oelde offers concepts to obtain a concentration of metals or to generate very pure metal contents for the so-called shredder heavy fraction produced by large shredders. By separating these valuable materials into their original component parts it is possible to obtain higher profits when selling the reclaimed secondary raw materials.



Together with our customers we design complete plants to process metals, for example, electronic scrap, shredder fluff and shredder heavy fraction and cooling scrap.

Because of the various milling and separating components our Multi-Metal-Separating Plant is extremely flexible. This means that not only car bodies can be processed, but also electric and electronic scrap, electric motors and aluminium scrap. We also integrate into the system plant components supplied by partners so as to be sure of obtaining the most favourable solution as regards price and product quality.



The combination of screening drum and Vibrosort generate a very good preliminary concentration of non-ferrous metal, by removing rubber and hard plastics in the Vibrosort. The fine particles of the inert fraction are screened out of the material flow and can be re-processed, if required.



No matter whether waste is bio-mechanically pre-treated or burnt, it is advisable in any case to separate out any impurities. Venti Oelde offers a number of different air classifying systems, so-called separators. These are characterized by using recirculating air and by their capability of handling large volumes. New developments such as the large particle separator complete the spectrum.

Even when bio-mechanical processing at a later date in waste processing plants is planned to produce secondary fuel, these classifiers are useful to generate a secondary fuel fraction with a high-calorific value.

Another field in which our engineers are at home is the ventilating of hand picking booths, where valuable fractions are manually sorted out of the waste material stream. The main object here is to provide the workers with a pleasant working environment and to eliminate germs and unpleasant smells.



We supply fans and ducts in special materials to ventilate decomposition chambers or other biological treatment processes.

Reduction of emissions by professional air management

As a result of the increasingly stringent legal requirements and costly treatment processes the whole dust collection and air handling field in waste processing plants has gained in importance. Venti Oelde applies its know-how in the handling of air and collecting of dust here. As well as simple filter plants and wet scrubbers we also supply large and complex dust collection plants, if necessary with precoating plants for the various cleaning systems.

Furthermore, we support the general contractor in building special plants, by developing specific air management concepts to minimize air volumes and, therefore, emissions.



The supply scope also includes the treatment of odorous air or air containing carbon. As well as classical bio-filters, bio-scrubbers with trickling filters can also be used.

At the request of customers, we also plan and build plants with activated carbon adsorption.



Hot, dust-laden oxy-fuel gases, produced, for example, when breaking up slag-blocks or cast blocks from converter or blast furnace smelts, are effectively captured, exhausted and dedusted before they are discharged into the atmosphere.

Capture hoods, appropriate to each process, efficient exhaust plants and high-capacity filter plants assist in the fight against dust and in transforming slag-block gas-cutting work-places into clean and humane workplaces.



Specific capture and the planning of pipes and ducts and their layout are also included in Venti Oelde's supply scope.



We select the appropriate dust collection equipment for each application after careful consideration. An example is the facility of changing over to a dry-type filter if no explosions are expected in the shredder. This filter provides an even better exhaust air quality than our wet scrubber.

Innovative concepts in control and safety engineering

Control engineering is of fundamental importance in the field of overall plant planning. Venti Oelde will develop, in collaboration with the customer, special controlgear for each task. Data crucial to operation are gathered and the necessary safety equipment integrated into the system.

Venti Oelde can offer simple control engineering in compact systems as well as highly complex plant controls using PC and monitor.



A good example of this is the working method of large shredder plants. Venti Oelde risked a step forward by replacing the control panel by a control cabin in which the shredder operator can sit comfortably and keep an eye on all vital process data and also the shredder infeed area at all times.



The pressure-shock-resistant and flameproof rotary airlock, developed by Venti Oelde and tested by the Deutsche Montan Technologie GmbH (German Mining Technology Ltd.) in the mining test plant, ensures fire protection isolation, e. g. between filter or separator and the downstream conveying system. The state-of-the-art construction complies with the applicable standards and guidelines.



Transporting dust in any way is generally connected with explosion hazard. Venti Oelde has gained experience in this field over the years and in co-operation with the customer can plan the integration of active and passive safety measures into the plant. Take advantage of this considerable experience and talk to our engineers.

Fire and explosion prevention is, of course, of crucial importance in this type of plant and is a point which is considered in collaboration with the plant operator or general contractor in the planning phase of the project.

Amplly sized explosion vents in the return air ducts and an 180 degree bend prevent the pressure wave being propagated in the workshop.



When ducts carrying material pass through fire protection barriers, safety elements, such as quick-closing fire-gates or fire protection dampers, can be used to isolate individual fire sections from one another.



Vital component: Fans

In all processes, such as pneumatic conveying, dust collection, etc., large amounts of air are handled. The fan is the central component here, built in all shapes and sizes.

Depending on the individual application, particular weight is placed on the design and form of the fan. As well as fans to handle clean air, fans suitable to handle dust-laden gases are equipped with appropriate wear-resistant liners. Special impeller geometry permits the fan to handle even chips and material.



Tearing fans or so-called pipe chippers can be used whenever it is necessary to further reduce the size of the material which is being handled. This equipment is also individually designed to solve each problem.



We also supply fans made from corrosion-resistant material for aggressive gases, such as are found in waste incineration plants downstream of the furnace.



The pressure-shock-resistant fan was specially developed for use in shredder plants. It can withstand pressure shocks up to 3 bar without any great damage to itself thanks to the explosion vents in the fan casing and impeller.

Venti Oelde helps comply with project-specific requirements in co-operation with the customer. If you have any processing problems in the area of production waste, take advantage of our knowledge and let's work out a solution to suit your individual requirements.

An example is the development of a special processing plant in which production waste from the manufacture of hygienic goods, such as diapers or incontinence products are successfully treated. The high-quality reclaimed valuable raw materials can be returned to the production process.

The system is based on a dispersion system with several separating stages in a highly accelerated air-stream, followed by separation in a multi-stage separator system. The complete material transport is effected in an integrated pneumatic low-pressure system, ensuring that the material is carefully handled.

The reclaimed cellulose has a purity of 95 % and the absorber of 98 %. Payback times of less than 2 years and a considerable reduction in waste volume are favourable arguments.



Since raw materials are being conserved and waste volumes clearly minimized, this innovative project was sponsored as a Eurolife Project by the European Union.

- ▶ Industrial fans
- ▶ Dust collection and process air cleaning plants
- ▶ Exhaust air treatment plants
- ▶ Ventilating, heating and air conditioning plants
- ▶ Recycling and waste processing plants
- ▶ Surface technology



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