
DECANTER CENTRIFUGES & PLANTS FOR SOLID/LIQUID SEPARATION



separation & process



WORLDWIDE

With over 6000 decanters manufactured, Hiller is a world-leading manufacturer of decanter centrifuges and a specialist in the construction of entire plants for solid/liquid separation.

From application-specific customised solutions through to cost-effective serial production - Hiller sees itself as a supplier of made-to-measure solutions that fulfil our customers' requirements in the optimum way.



INNOVATIVE

Hiller is an innovative company with state-of-the-art production facilities and continuous development of manufacturing processes.

As a matter of course, we utilise the latest tools across all project stages, from design to planning and project management through to production.

HIGHEST QUALITY

With over 50 years of experience in developing and manufacturing decanter centrifuges and turn-key plants, we guarantee the highest possible product quality.

This high quality is Hiller's top priority - in order to maintain it at a consistently high level, we rely on Bavaria as a production location and supply our customers with high-quality products „Made in Germany“.

FACTS & FIGURES

1971

founded by Georg Hiller senior

>50

years of experience in developing and manufacturing decanter centrifuges & plants for solid/liquid separation

>6.000

centrifuges manufactured make Hiller one of the leading manufacturers and an absolute specialist in the field of solid/liquid separation

250

decanters manufactured and sold worldwide each year

30.000

square metre site with a 5200 square metre production area with the latest processing systems

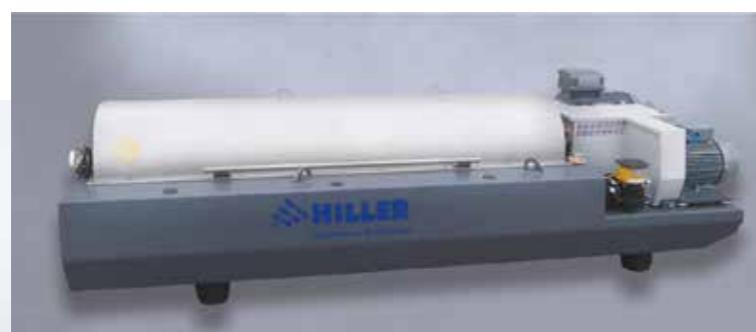
160

highly qualified employees with many years of experience and the highest levels of expertise

40

million euro turnover per year

DECANTER CENTRIFUGES



VERSATILE

The decanter centrifuge, or the solid bowl scroll centrifuge, is a highly versatile machine in usage, with potential applications in key fields such as environmental protection, the food industry, the oil industry, the chemical and pharmaceutical industry or the paper industry.

Just as versatile as the applications are the process requirements that are reflected in the various machine designs.

CUSTOMER-OPTIMISED

We have a wide repertoire of measures that we can deploy to optimise our decanters to the process requirements of the customer. As a version for general use, we offer 2-phase or 3-phase decanters, e. g. in an explosion-proof or food grade design.

Extending beyond this modular system, we develop custom machines for special applications, right through to one-off machine production, e. g. for catalytic converter manufacture, for the classification of pigments or for the preparation of by-products from biodiesel production.

MOBILE IN USAGE

HILLER TEST PLANTS - a safe decision

With our fleet of mobile pilot and test plants, we are able to help our customers all around the world to subject new procedure concepts to practical testing, to acquire process data and to generate optimal solutions, all during continuous operation.



HILLER RENTAL PLANTS - fast and efficient

We have a variety of mobile plants that can be leased to bridge the gap during an extended repair period, or during conversion phases.

Qualified personnel can also be made available for the entire duration of the rental period.

The plants are equipped with the latest technology so they can be optimally integrated into the process as a replacement system with minimal effort in just a few hours.

BENEFITS

- flexible and fast deployment
- low space requirements
- high level of efficiency
- minimal staff requirement
- simple operation
- maximum solids content discharged
- high throughput levels

TEST AND RENTAL PLANTS

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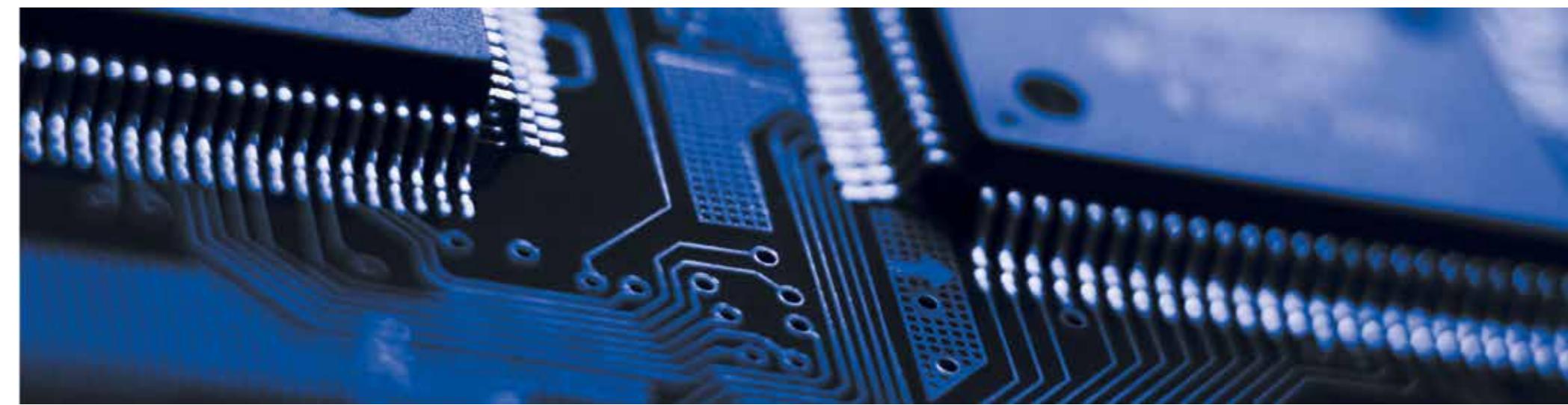
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ALL PLANT COMPONENTS FROM A SINGLE SOURCE



PERFECT INTERACTION - all plant components from a single source

En route from raw product to finished product, the Hiller decanter is an important key to success, but it is not the only one. The appropriate engineering of the peripheral components as well as the perfect interaction of all plant and process components are also of critical importance. Hiller GmbH undertakes the entire engineering process for you, from installation planning to project planning for all the necessary individual components from electrical engineering through to the overall planning of process-oriented customer solutions. This means we guarantee for our customers the safe and efficient operation of their plant with a total solution all from one source.



Compact system DecaSmart in 3D



Compact system DecaSmart

TURN-KEY DECANTER PLANTS - the fast route to success

Hiller offers you compact solutions for your separation task: made-to-measure, turn-key plants. These are fully pre-assembled, piped, cabled and factory tested, making them operationally ready to tackle your tasks immediately. Based on the local site conditions and the customer's requirements, we deliver turn-key plants for all our standard decanter models, in containers, on trailers or pre-assembled onto a steel frame.

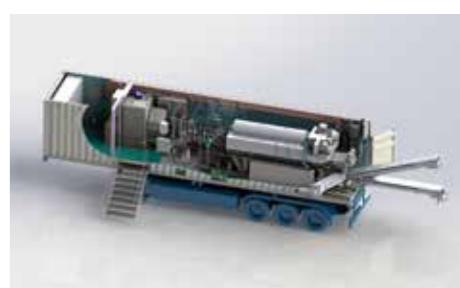
ATEX - Safety thanks to many years of experience

Hiller decanters and plants are used in many applications that require explosion protection. The design basis for these products is provided by the requirements of ATEX. Hiller offers its customers the advantage here of many years of experience in meeting a variety of process requirements. We design the entire plant specifically for the customer's application; this can extend from use in an explosion-proof environment for zones 1 and 2 through to a solution for processing flammable or toxic media via inertisation. In this process, the oxygen in the air within the centrifuge and seals is replaced with inert gas.



AUTOMATION - Maximum quality levels from Hiller

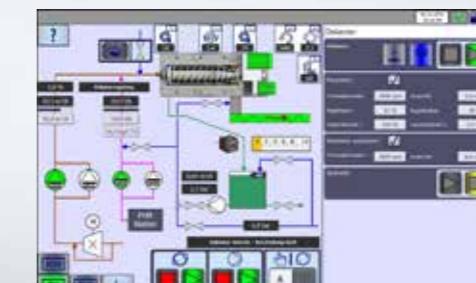
To ensure a perfect workflow for your plant, at Hiller we rely on the automation experts within our own specialist team. The decanter control is designed for the specific requirements of the machine in question, and offers simple operation. By delivering the complete switchgear system, Hiller provides its customers with a comprehensive solution as a 'one stop shop', also avoiding unnecessary interface problems. This means that in addition to a powerful process, we also ensure problem-free commissioning and user-friendly handling in operation.



Compact systems in 3D



Explosion-proof decanter



Touchpanel on a Hiller switchgear system

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HILLER DRIVE UNITS



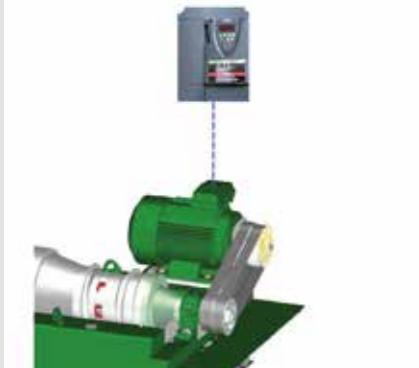
DRIVE SOLUTIONS FOR DECANTERS

Hiller decanter centrifuges consist fundamentally of a rapidly rotating bowl for generating high centrifugal forces and a screw conveyor that clears the solid material in the bowl.

The requirement for the screw conveyor is to generate a high torque at a lower differential speed in relation to the bowl.

Hiller offers 5 DRIVE SYSTEMS that fulfil these requirements. All drive systems are also available for applications in EX zone.

FIXED GEARS



BOWL DRIVE:
Electric motor with frequency converter control; bowl drive via V-belt

SCROLL DRIVE:
Generation of the differential speed with planetary gears, driven via V-belt

Bowl and scroll drives are coupled together

DECA-DRIVE



BOWL DRIVE:
Electric motor with frequency converter control; bowl drive via V-belt

SCROLL DRIVE:
Electric motor with frequency converter control; generation of the differential speed with planetary gears;
Power supply to the scroll frequency converter via intermediate circuit

Scroll speed dependent on bowl speed

FSG-DRIVE



BOWL DRIVE:
Electric motor with frequency converter control; bowl drive via V-belt

SCROLL DRIVE:
Electric motor with frequency converter control; generation of the differential speed with FSG gears

Bowl and scroll drives are decoupled

HYDRAULICS



BOWL DRIVE:
Electric motor with frequency converter control; bowl drive via V-belt

SCROLL DRIVE:
hydraulic motor and hydraulic unit supplied via rotary connector;
optional frequency converter controlled, energy efficient unit

Bowl and scroll drives are decoupled

FULLY HYDRAULIC



BOWL DRIVE:
hydraulic motor supplied via rotary connector; driven by V-belt

SCROLL DRIVE:
hydraulic motor supplied via rotary connector;
One hydraulic unit (fully hydraulic)

Bowl and scroll drives are decoupled

SEE-CONTROL PRO

All Hiller drive systems are equipped with the electronic control system SEE-Control pro, which has a 10 inch touch display. This permits the control of the entire centrifuge, including all electronic instruments.

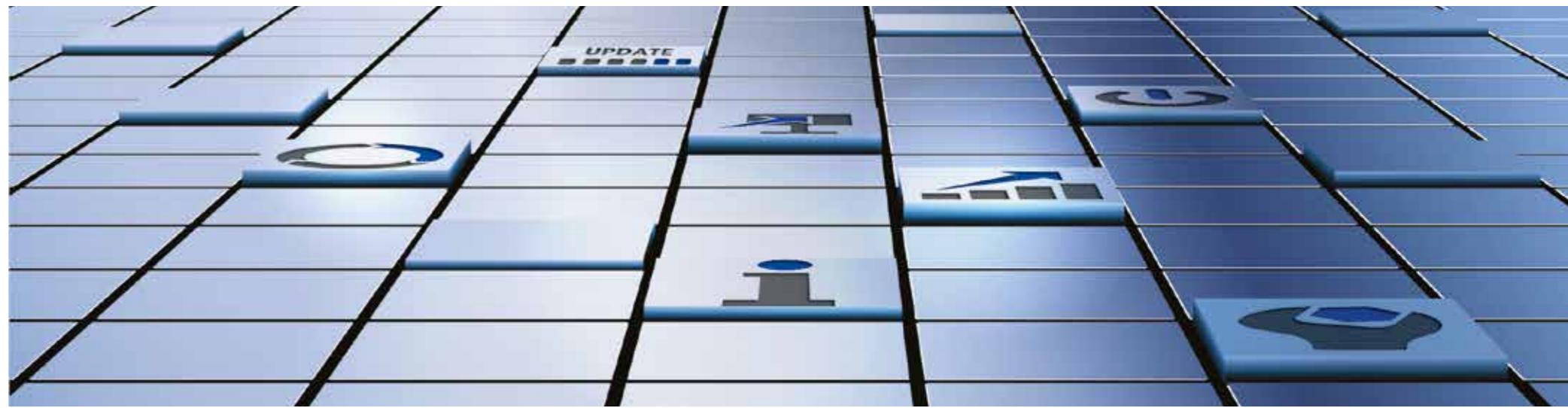
BENEFITS

- intuitively operable
- permanent display of all important operating data
- individually programmable control response
- clear interface between centrifuge and plant
- remote monitoring possible



SEE-Control pro

SERVICE & REPAIRS



MAXIMUM RELIABILITY

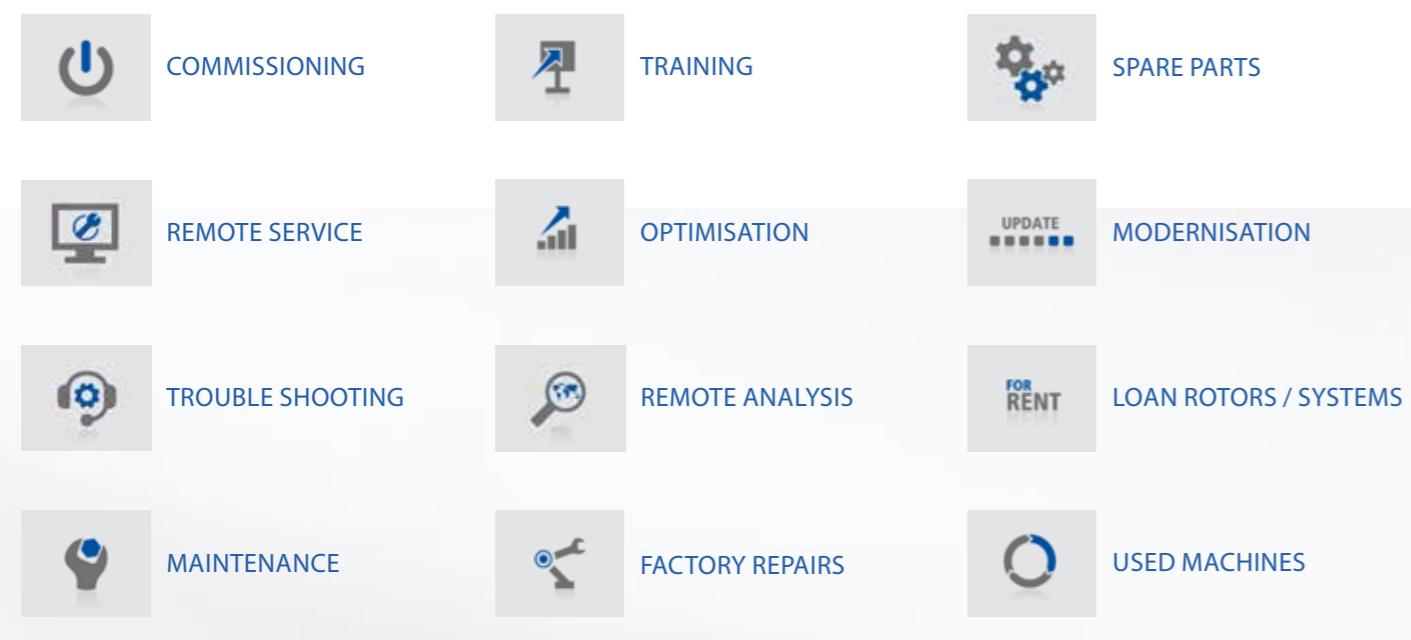
All over the world, Hiller decanters are performing their duties with the utmost reliability. The requirements of our customers in terms of operational reliability and availability of the machinery and system technology used are increasing continually.

Simply by purchasing a new Hiller decanter, our customers are selecting a comprehensive 'Essential Servicing Concept' that guarantees professional care for your decanter and systems for the entire life cycle of the equipment.

NO STANDSTILL TIME

The Hiller decanter is often at the centre of a highly integrated production facility and a standstill would have a serious impact on the operating result. A lack of machine redundancy can also intensify the problem. This situation is an extremely delicate one, particularly in the context of 24/7 operation, seasonal operation or when dealing with products with a short shelf-life.

HILLER LIFE CYCLE MANAGEMENT



BCS SPARE PARTS CONCEPT

To ensure maximum operational reliability for our customers, Hiller has developed the BCS Spare Parts Concept and has successfully implemented this for many delighted customers. BCS here stands for the modular levels of the Basic, Comfort and Safety spare parts packages.



Every level includes a carefully compiled spare parts package including comprehensive text and image documentation for all Hiller units supplied.

The choice of packages required is made by the customer. Every additional module increases the operational reliability of the customer's system by another level up to the maximum.

We would be happy to provide you with a tailored BCS spare parts quotation in line with your personal requirements.

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ENVIRONMENTAL TECHNOLOGY & WASTE WATER TREATMENT



ENVIRONMENTAL TECHNOLOGY IN THE PUBLIC AND INDUSTRIAL SECTORS

Environmental issues, such as the treatment of waste water, handling raw materials as well as the utilisation of renewable energy sources and the avoidance of harmful emissions, are becoming ever more pressing. Hiller has taken on this challenge and for over 50 years has been developing decanters for the field of environmental technology. These are used for many applications, including dewatering or thickening sludge, preparing drinking water and exploiting renewable energy sources.

ENVIRONMENTAL PROTECTION & COST-EFFECTIVENESS

As well as protecting the environment, Hiller technology makes a considerable contribution to the cost-effectiveness of the entire process thanks to the minimal use of polymers, the low energy and water consumption as well as the high proportion of solids in the discharged matter. Added to this, the long service life and low standstill times of Hiller decanters also ensure a high level of cost efficiency.



SLUDGE DEWATERING & THICKENING

SLUDGE DEWATERING

Dewatering of the sludge with maximum dry substance content in the solids phase, with high throughput performance and considerably reduced use of flocculant aids.

SLUDGE THICKENING

Reduction in the sludge volume before onward treatment, offering a further level of operating cost savings. In addition, very often no flocculant is required by Hiller decanters in the thickening process and they achieve the highest possible separation levels.



Hiller decanter in municipal wastewater treatment

FOOD & DRINK



GENTLE PRODUCT PROCESSING

The market for food and drink is experiencing continued growth. Industry is required to provide a high level of services to be able to meet the wide variety of customer requirements. As a result, suppliers to this industry sector face high requirements in relation to hygiene, efficiency and gentle product processing.

Hiller decanter technology has been successfully deployed in a wide variety of sectors within the food and drink industry for many years. Hiller decanters are not only extremely powerful, but are also based on an optimised procedure for the food and drink industry. The closed system prevents oxidation and guarantees gentle processing.

COST-EFFECTIVE

Our customers profit from low operating costs thanks to the reduced consumption of energy and fresh water, as well as reduced personnel, servicing and maintenance costs. What is more, high throughput rates coupled with maximum yields and a long machine service life ensure maximum costeffectiveness.

Hiller decanters process up to 30,000 kilograms per hour at the maximum capacity level. Control systems and design-based procedure optimisations ensure smoothrunning operation, short cleaning and setup times as well as flexible setting options during ongoing production processes. The cleaning of the machine runs fully automatically via a CIP cleaning system.



APPLICATIONS

Fruit / vegetable juices
 Berry juices
 Chokeberries
 Purees
 Apple pomace / apple juice
 Olive oil
 Rapeseed oil
 Avocado oil
 Fish processing
 Sugar processing / sugar extraction
 Potato processing
 Yeast / beer yeast / beer wort / treber / hops
 Whey / milk products
 Plant juices
 Cooking fats
 Tea extracts
 Wheat starch
 Fruit extracts
 Grape juice / wine
 Greaves
 Coffee grounds
 Maize germ
 Maize starch
 Soda
 Salt

FOOD GRADE PROCESS

- gentle and rapid processing
- prevention of oxidation thanks to external air lock
- very short dwell times in the machine
- cleaning intervals can be selected depending on the type and degree of contamination
- fully automatic CIP cleaning
- closed system
- complete odour encapsulation
- environment remains dry and clean
- food grade surfaces and operating equipment
- all components coming into contact with product are FDA-approved

HIGH THROUGHPUT

- maximum yield
- maximum speeds
- low space requirements
- low maintenance costs
- adjustable clarification level via skimming disk technology
- reduction in the separation levels
- simple process management
- system freely programmable by the operator



Hiller decanters in the food industry



OIL & GAS, POWER GENERATION



POWER GENERATION

To ensure the ability to reliably cover humanity's growing energy needs for the future, in energy generation the focus is increasingly not only on efficiency but also on sustainability and environmental friendliness, and research is being carried out for future-proof solutions. This means that the entire industry sector is undergoing continuous change, which is always creating new potential applications for such a versatile machine as the decanter. Hiller high performance decanters have been successfully in use in the energy sector for over 50 years. Many tasks for our decanters in this field relate to the dewatering of various residues, but they also play a key role in the generation of the raw materials.

RESOURCE-CONSERVING OIL RECLAMING

In addition to these traditional tasks in the field of waste material preparation, recycling tasks play an enormously important role. This is because due to rising oil prices and increased levels of environmental awareness, the reclaiming of mineral, plant-based and animal oils from various waste products and by-products has been becoming ever more important for some years now. The correct processing of millions of tonnes of mineral oil sludge worldwide from conveying, storing and refining crude oil generates a valuable raw material and energy source. Potential hazards for water, air and earth are removed and surfaces previously lost are made available again for appropriate usage. The processing of plant-based and animal-based waste also opens up sources for high quality oils and greases, and frequently also converts the solids in the waste into a valuable byproduct.



EXAMPLE APPLICATIONS OIL RECLAMING

- ground sludge from oil storage tanks
- slop oil from lagoons and refineries
- sludges from plant oil mills
- waste from the food industry
- kitchen waste
- used food grease
- slaughterhouse waste
- rendering
- waste from the leather industry

EXAMPLE APPLICATIONS POWER GENERATION

- algae harvesting
- plant oil production and cleaning
- glycerine preparation from biodiesel production
- grains from bioethanol production
- fermented biowaste
- flue gas cleaning sludges
- sulphur from natural gas desulphurisation

BENEFITS

Depending on the applications in question, Hiller high performance decanters feature a range of important advantages:

- high product value thanks to maximum purity of the products obtained
- minimised disposal costs thanks to minimal residual moisture in the solids
- very low personnel costs thanks to the suitability for continuous operation and automatic operation
- low space requirement due to very compact dimensions
- minimal odour and aerosol emissions due to the closed design
- design based on simple and cost-effective upkeep, as well as on a long service life
- robust, industry-compatible design and high quality "Made in Germany" production



Explosion-proof oil sludge treatment plant in a refinery

CHEMICAL PROCESSING, PHARMACEUTICAL INDUSTRY



CHEMICAL INDUSTRY

Developments in the chemical industry are of enormous importance for the wellbeing of humanity and are generally closely linked to other fields, such as the processing and pharmaceutical industries. In this sector there are numerous processes for which Hiller decanters are ideally suited. Whether it's the extraction of specific contents, classification, dewatering or the separation of different liquid mixtures.

APPLICATIONS

- paper sludge dewatering
- extraction of plant extracts
- separation of organic acids (liquid / liquid separation)
- solids/liquid separation of mineral substances
- oil preparation
- plastics recycling/sorting
- lecithin extraction

HIGH PERFORMANCE

- high throughput
- low residual humidity
- adjustable clarification level via skimming disk
- gentle processing
- continuous, fully automated operation

COST-EFFECTIVE

- long service life
- high level of wear protection
- minimal personnel needed
- optimised energy consumption
- low cost of repairs and maintenance



Hiller decanter in a chemical process

MINING & TUNNEL CONSTRUCTION



MINERAL INDUSTRY

Centrifuges are used to prepare mineral suspensions all over the world. Hiller decanters are ideally suited to hydrometallurgical processes, such as the extraction of gold, silver or nickel. The processing of industrial minerals such as calcium carbonate, kaolin or titanium dioxide is also optimally carried out using Hiller technology.

The dewatering and classification of mineral sludges is a complex issue, and requires special designs. Hiller high-performance centrifuges have been developed and optimised rigorously for applications such as these.



MINING AND TUNNEL CONSTRUCTION, DRILLING FLUIDS

Due to globalisation, the expansion of road networks is increasingly gaining in importance. Hiller decanter centrifuges are increasingly used for solids/liquid separation in tunnel construction, both for shield tunnelling technology, and for microtunnelling and tunnel dewatering. A further application is the processing of drilling sludges in the geothermal field.

BENEFITS OF HILLER DECANTERS

- high level of reliability
- high performance protection against wear
- long service life
- service-friendly design
- powerful drive system
- maximum dry content in the solids
- more economical and energy-efficient operation



Hiller decanters in tunnel construction

HILLER WORLDWIDE



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