

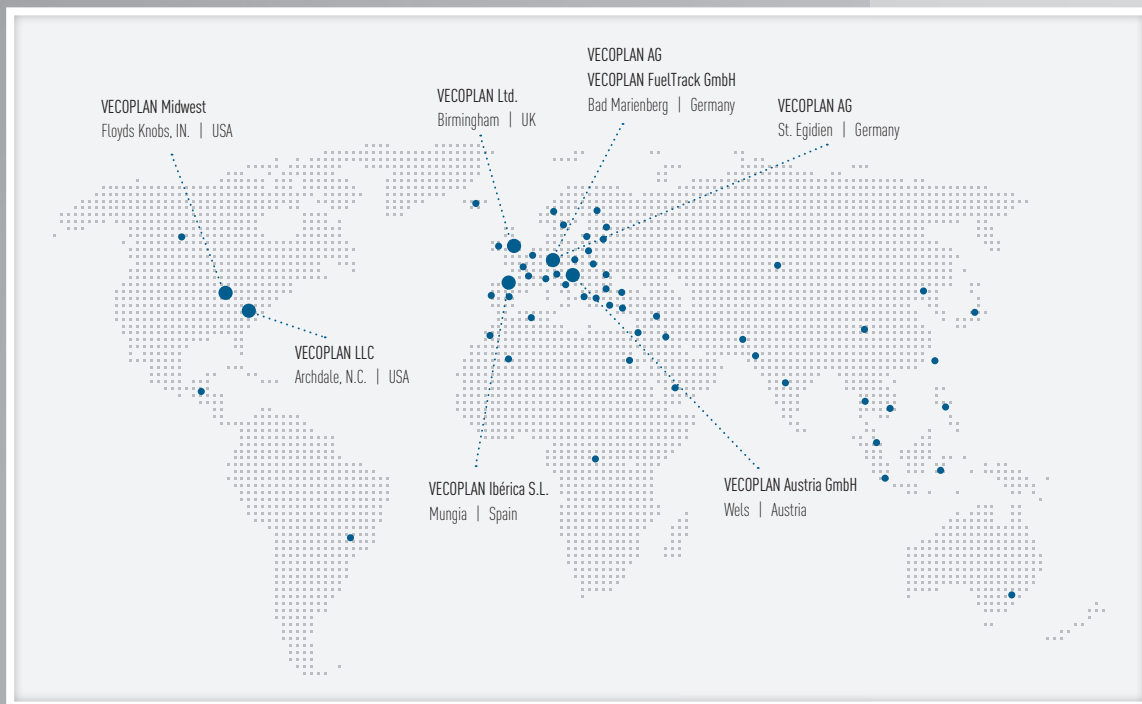
TECHNOLOGY FOR A SUSTAINABLE TOMORROW



SPECIAL APPLICATIONS

WE EXCEL IN CREATIVE THINKING

Vecoplan[®]



VECOPLAN INTERNATIONAL

Made in Germany

Waste avoidance, conservation of resources and efficient use of recyclable materials are among the most urgent challenges and tasks of our time. The importance of environmental awareness and sustainability is increasing on a daily basis. Our company has been successfully tackling these challenges for more than 40 years, and today we are a leading partner in the international wood and recycling business, with numerous subsidiaries and sales offices worldwide.

VECOPLAN AG develops, manufactures and markets technologically sophisticated machines and plants for shredding, conveying and processing primary and secondary raw materials in production processes and recycling. Our customers benefit from cutting-edge technology, made possible by continuous research and development combined with in-house production. Our track record is impressive: a number of patents testify to our know-how. In order to meet the demand for ground-breaking technology and outstanding quality, we have focussed our operations on our core competences. Our Service Division complements this structure.

We take our customers through the entire process, from planning to production, delivery, installation, commissioning and on to maintenance of the complete plant. VECOPLAN AG delivers the highest sustainable quality standards, whether it be an individual machine or complete plant, according to our customers' specifications. Of course, we are certified to EN ISO 9001.

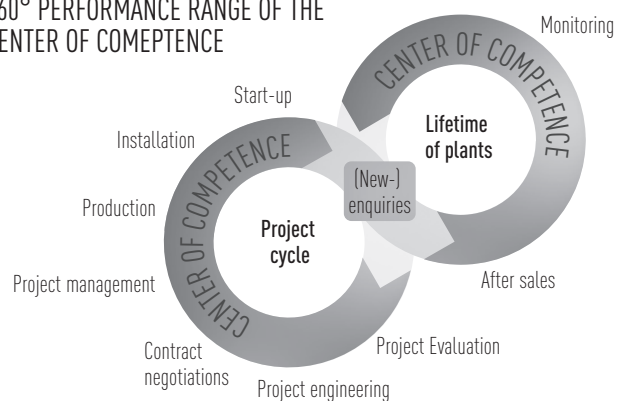


MASTERMINDS – POWER FOCUSED

The increasing importance of environmental protection and resource conservation is creating ever greater interest and demand for innovative technology solutions, not only for processing primary and secondary raw materials, but also for the recycling of non-ferrous metals, scrap electronics, medical waste, cables and metal composites. Based on more than four decades of experience, our plants and systems have been adapted to meet the diverse requirements of difficult-to-process and valuable composite materials.

Our knowledge and experience are concentrated in our Center of Competence, which keeps a close watch on global developments in the raw materials markets and regulations. In the interests of our customers, we are in a position to respond rapidly to market changes, identify opportunities, work with you to refine specific aspects of products and offer individual solutions. Our service portfolio, from planning to commissioning, includes the complete range of systems technology. From the outset, our Center of Competence provides a professional project planning service and delivery of your systems and plants, all from a single source and to the highest quality standards. On schedule. Promptly. With practical experience and customer orientation.

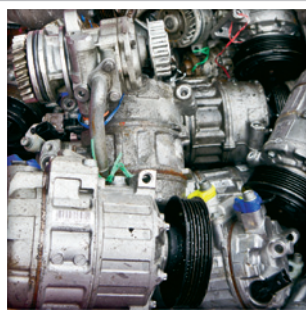
360° PERFORMANCE RANGE OF THE CENTER OF COMEPTENCE



THE RIGHT SOLUTION FOR EVERY MATERIAL



Briquettes



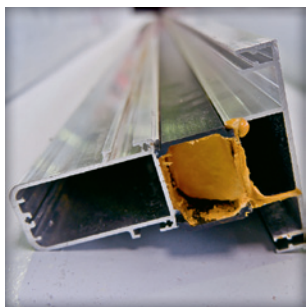
End-of-life vehicle composite materials



Composite materials*



Glass-fibre reinforced plastic (GRP)



Insulating profiles



Carbon-fiber-reinforced plastic (CFRP)



Scrap electronics



Crown caps

Solutions for the processing of:

- profiles, cans, cables, scrap electronics, non-ferrous metals and metal composites

VECOPLAN provides a number of innovative technical solutions from a single source for the necessary processing of materials for recycling. The systems and components we produce and sell are used for shredding, conveying, screening and separating. The development and manufacture of plants for cost-effective recycling is technology-intensive. The nucleus of the processing plants is the shredding technology required for optimal separation.

* Materials covered by the German DSD dual system for waste management

The materials obtained from shredding and separation subsequently go on for further processing in the following areas:



Aluminium (sorted / unsorted)



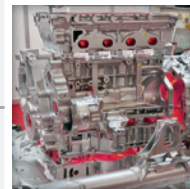
Scrap electronics (sorted / unsorted)



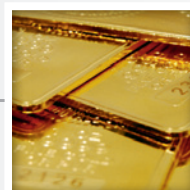
Cans



Profiles



Aluminium ingots



Precious metals

COMPOSITE MATERIALS ARE VERSATILE JUST LIKE OUR TECHNOLOGY

Different raw materials place different demands on the technology: VECOPLAN provides a number of innovative technical solutions from a single source for the necessary processing of materials for recycling.

The use of impact and cutting material processing methods means that different sorting requirements can be met. For example, composite materials can be separated cost-effectively into their component parts.

With minimal adhesions, the best price for the material can be obtained. In cooperation with our customers we work out solutions for their specific requirements.

Shredding



Example: Single-shaft shredder (VAZ)

SHREDDING IS OUR CORE COMPETENCE

Our customers benefit from our experience in shredding technology, which has been accumulated over many years. With six different types of shredder, we have the appropriate, perfectly-tailored shredding technology to meet all material requirements. Even composite materials can be precisely separated using impact processing technology.

Conveying



Example: Belt conveyor

CONVEYING TECHNOLOGY – TAILOR-MADE

We have all of the belt, screw and vibrating conveyors to get your material moving. Our product range includes equipment optimised for bulk material and piece goods. Sharp-edged, dust-raising or hot materials, too, can be conveyed safely and cost-effectively.

Screening



Example: Oscillation screen (VSS)

GETTING THE MOST OUT OF EVERYTHING

Using oscillation screening technology (e.g. with perforated or bar screen), feed materials of different shapes or weights can be pre-sorted into a defined final particle size. This forms the basis of efficient separation.

Separating



Example: Overbelt magnetic separator (VÜB)

FOCUSING ON THE ESSENTIAL

With the aid of our separating technology, various materials can be separated cost-effectively and with a high level of sorting accuracy. By combining different separation methods, our customers achieve optimal results with maximum quality standards.

A number of overbelt and underbelt separation methods (ferrous/non-ferrous separators), various air separators, gravity separation tables and other devices are available. Collaborating with renowned suppliers, we also offer you optical sorting systems, X-ray or reflected radiation sorting systems as well as methods of separating different plastics, e.g. from shredder light fractions.

Storing

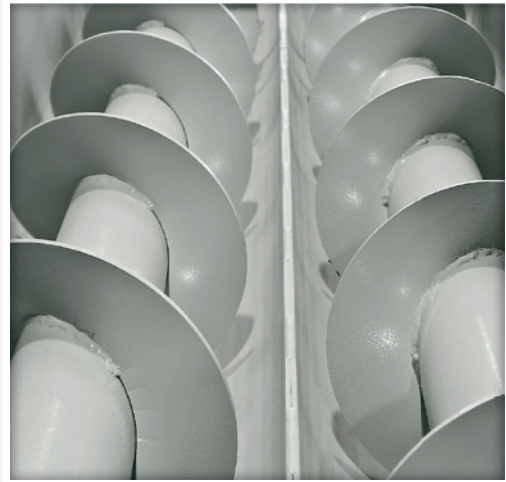


Example: Loading and unloading conveyor (BEF)

STORAGE IS NOT AN ART – IT IS A SCIENCE

In addition to octabin, Big Bag and sack filling stations, our standard range includes silos of various sizes with integrated discharge conveyors, e.g. for truck loading. Alternatively, a baling or briquette press may be used to reduce storage volumes or to compact metals (e.g. to improve melting properties).

Dosing



Example: Double screw conveyor (DFS)

SUPPLYING THE EXACT MEASURE REQUIRES THE RIGHT TECHNOLOGY

Precise dosing is essential for subsequent steps such as separation. Dosing conveyors such as vibrating infeeds and screw feeders of various sizes are often used for this purpose. We would be happy to design plant-specific solutions for you as well.



PROCESSING COMPOSITE MATERIAL ECONOMICALLY AND EFFICIENTLY

With a tailor-made system, almost all materials can be processed cost-effectively and energy-friendly. Based on modern technologies and highest standards of quality, we also offer solutions for materials which are difficult to shred. Our customers benefit from our experience in the field of shredding, conveying and separation technology, which has been accumulated over many years.

Our roots are in the wood market: our first customers were in the sawmill and furniture industries. The first complete plant which we supplied to our customers in 1973 was a recycling plant.

By consistently advancing our cutting and drive technology, we are today in a position to meet the strict legal requirements; for example, in the processing of scrap electronics. Where customers require the entire value

chain to run smoothly, VECOPLAN, being a system supplier, is first choice. From material recovery, shipping cost reduction or development of alternative processing methods, our systems and plants offer impressively low operating costs, high availability and high throughput. We prioritise operational and process reliability.

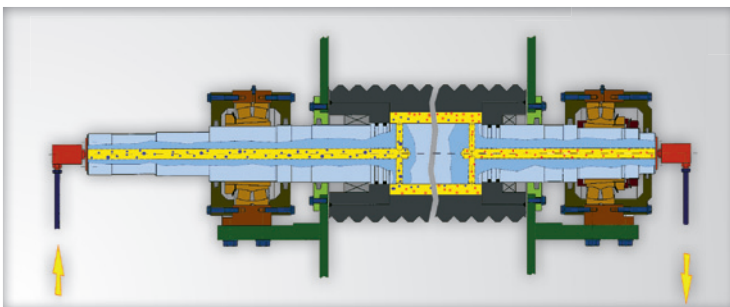
Our plants are therefore ATEX-compatible and can be fitted with spark detection and extinguishing systems.

DRIVEN BY INNOVATION

The engineers and technicians in our Research and Development department work tirelessly to deliver increasingly superior solutions to meet our customers' varying requirements. A number of patents testify to our technological leadership.

Since the VAZ was brought to market in 1983, the technology has been refined on an ongoing basis. VECOPLAN also holds a patent for the universal cutting unit (U rotor) developed in 1989. There have been further optimisations since then, including the tramp material protection device, pneumatic-lowering counter knife ("Flipper"), hydraulic bridge-breaker,

the patented film and fibre rotor (2002) and the patented HiTorc® drive with optimised efficiency (2005). Innovations by VECOPLAN redefine the market time and again. Since 2009, we have been intensively and successfully researching solutions for niche markets such as medical waste, non-ferrous metals, scrap electronics and aluminium.



Rotor cooling

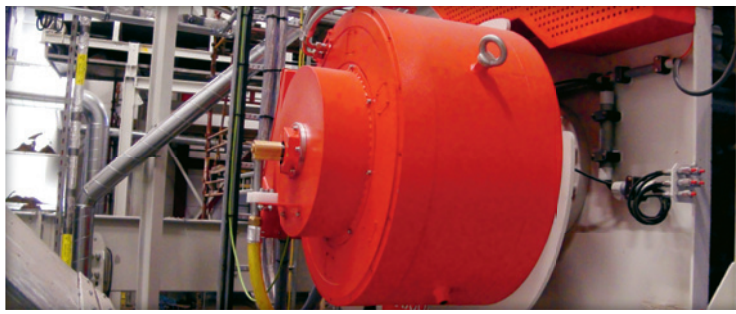
- Little expansion at cutting interface
- Reduced material heating with feedstock with low melting point



Profiled solid steel rotor

Profiled rotor for extremely homogeneous and easy-to-convey particle size

- 4-sided rotor tools
- Easy cutter changing
- Resistant to tramp materials



HiTorc®

THE alternative to the hydraulic drive

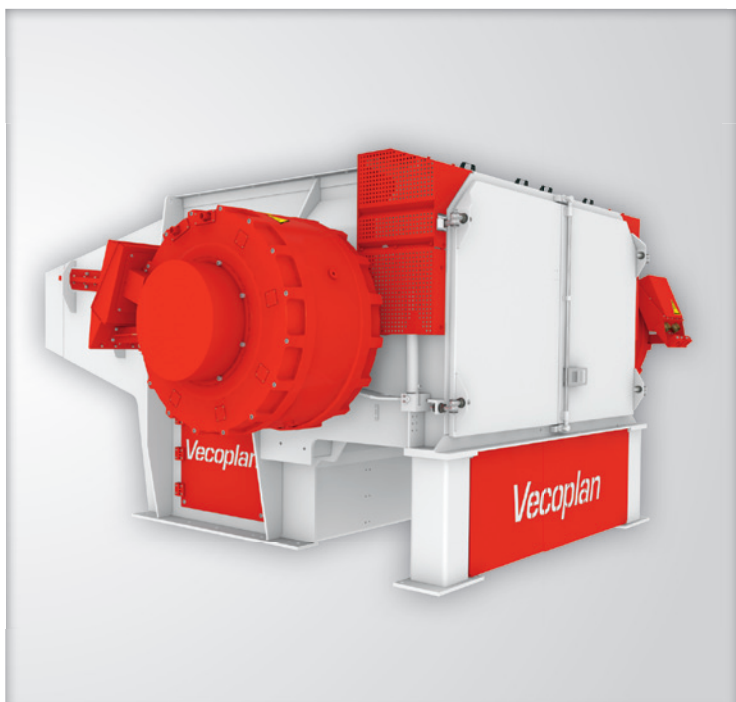
- Direct drive motor / permanently controlled synchronous motor
- Availability of more than 95 %
- Energy saving of approx. 50 % with pre-shredders
- Current peaks are roughly halved (compared with asynchronous motor)
- Compact/quiet/almost maintenance-free
- Compact / quiet / low-maintenance



VecoBelt

Pipe belt conveyor – for conveying bulk material on the horizontal or on a slight incline

- Continuous distances of up to 400 m
- Low-noise and low-dust conveying as belt enclosed in tube



VAZ 2000 MH TT

- Three different cutter versions with screwed tools for an optimized adjustment to the input material
- One-step cutting process
- Homogenous output due to cutting system
- Low wear- and operational costs because of smart design work
- Low energy consumption with HiTorc® drive
- Application of one or two drive motors possible each with strong moments of torque
- Exchangeable screens
- Nominal torque up to 110.000 Nm
- Segmented counter knife, adjustable from the outside for easy clearance geometry

COMPLETE INSTALLATION OF COMPLEX PLANTS

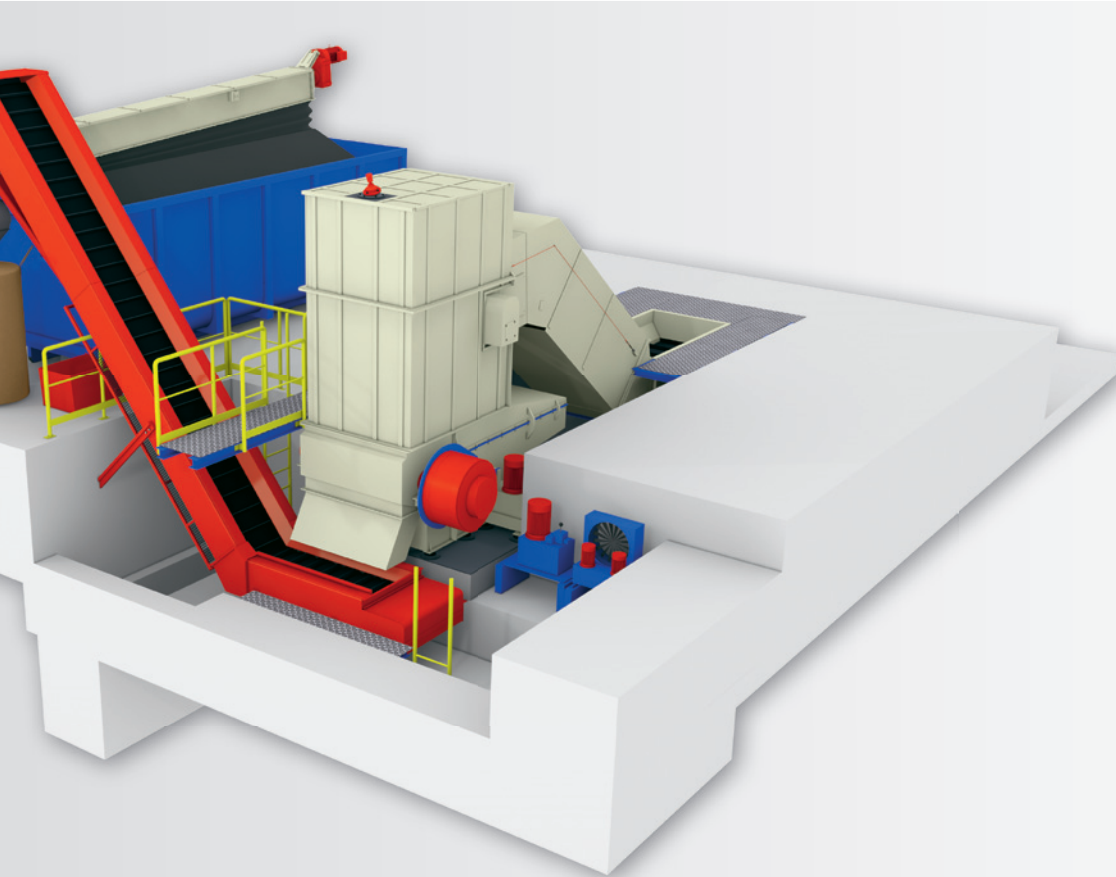


Electrical engineering tasks

- Drawing up of process descriptions
- Assessment and evaluation of regulations, standards and guidelines
- Development of automation/operation and safety concepts, tailored to customer needs
- Drawing up of measuring point and consumer lists
- Planning and manufacture of the switchgear and control elements incl. documentation, programming and parameterisation
- Adaptation of plant-specific software

Project management tasks

- Management of the project commission and, as such, assumption of overall responsibility for the project until final acceptance
- All-embracing coordination of interfaces internally and externally, both the technical and organisational side
- Contract management
- Definition of the project goals in line with customer needs
- Project planning, organisation and control:
 - Assembly of the project team in consultation with the departments
 - Detailed planning of the plant concept in close consultation with the customer
 - Drawing up and updating the project overall schedule
 - Planning of resources in consultation with the departments
 - Responsibility for costs and adherence to budget
- Documentation and reporting
- Preparation and execution of project meetings (both internal and external)
- Handover of project to the customer and, internally, to the customer account manager in After Sales



DURABLE – POWERFUL – SOLUTION-ORIENTED

Non-ferrous metal production waste and scrap arises in combination with many other materials.

We at VECOPLAN have the know-how to process your non-ferrous metals and composite materials efficiently and cost-effectively, thereby enabling our customers to get the maximum economic benefit.

The durability of a VECOPLAN plant is determined by perfect design and rugged build. This results in plants and systems with exceptionally long service lives and maximum availability, especially in multiple-shift operation.

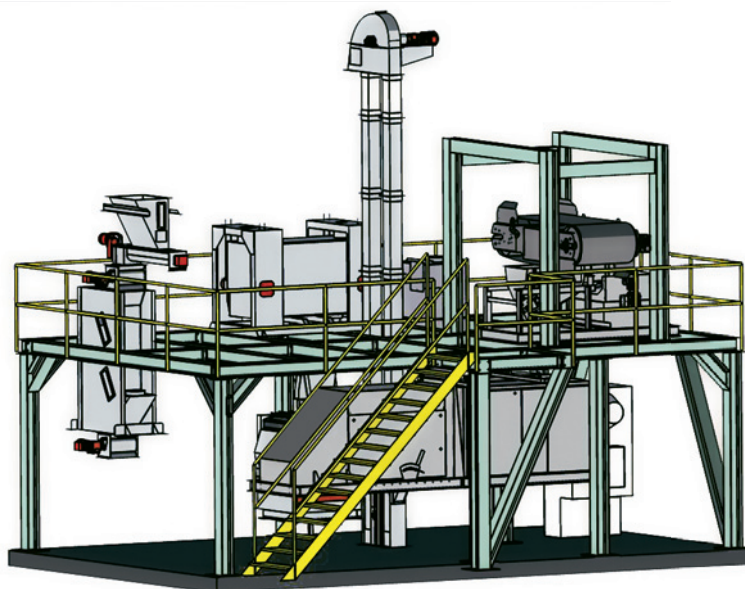
EXISTING SHREDDERS IN HILDEN TECHNICAL CENTRE:

For special applications

- VTH 65, 45 kW (40 x 40 mm cutters)
- Impact separation, 110 kW
- VAZ 800 SP, 22 kW (60-180 rpm)
- VAZ 1300 T (TF 46 with 110 kW (14,000 Nm);
40 x 40 mm and 60 x 60 mm cutters)
- VAZ 2000 TT (each with TF 62 (55,000 Nm) and TF 46 (with 14,000 Nm);
40 x 40 mm and 60 x 60 mm cutters)
- Plants are equipped with telemodem and amperemeter
- All hoppers are connected to a dust removal installation

For plastics recycling:

- VAZ 800 XL (40 x 40 mm cutters)
- VAZ 1300 T (standard and FF rotor, 40 x 40 mm cutters)
- VAZ 1800 NKF T (standard and FF rotor, 40 x 40 mm cutters)





SORTING PLANTS IN THE HILDEN TECHNICAL CENTRE:

- Ferrous separator (overbelt / underbelt)
- Non-ferrous separator
- Zig-zag separator (400 mm wide)
- Gravity separation tables
- Oscillation screen – 2-3 decks / bar sizer – 3 decks
- Vibrofeeder
- Air separator
- Cyclone for separation of heavy components
- Dust removal installation

YOUR JOB IS OUR RESPONSIBILITY



Original parts



Service



Contact



An overview of our service packages:

	Basic	Comfort	Premium
Safety			
Safety review	•	•	•
Safety check	•	•	•
Cost-effectiveness			
Analysis of cost-effectiveness of repair	•	•	•
Travel to and from customer	•	•	•
Storage costs	-	•	•
Guaranteed spare parts prices	-	-	•
Shipping costs of wearing parts	-	-	•
Optimisation			
Information on innovative further development	•	•	•
Availability			
Inspection	•	•	•
Expert condition report	•	•	•
Priority in case of failure	-	•	•
Maintenance (equipment check)	-	•	•
Preventive maintenance (equipment replacement)	-	-	•
Service			
Original parts advice	•	•	•
Technical advice	•	•	•
TeleService (remote maintenance)	-	-	•



INTERNATIONAL NETWORK ENSURES AN OPTIMUM SERVICE

We create synergies and efficiently link the knowledge and experience of our employees in the interest of our customers and their steadily growing requirements. This means we can guarantee fast and reliable technical support for our customers, even at an international level. We carry a responsibility as a one-stop provider of holistically designed plant solutions – and that does not change after our machines have been delivered.

In addition to consulting, project planning, installation and commissioning, our service package therefore also includes intensive training and a well-structured maintenance and customer service. Furthermore, we offer individual repairs and a quick and reliable spare and wearing parts service. So you can rest assured that when you need us we will be there immediately.

We at VECOPLAN plan, manufacture and install your plant from a single source and our rapid and competent

service is available to you round the clock. Our TeleService reliably reaches any location in the world: plant problems can be diagnosed straight away. Settings can be made, data transmitted and errors rectified via the remote maintenance and remote link modules. In this way, we guarantee professional support and thus the maximum availability of your VECOPLAN technology. Our inspection and maintenance packages safeguard your investment. We offer predefined service packages which, of course, can be amended to meet your individual needs.

