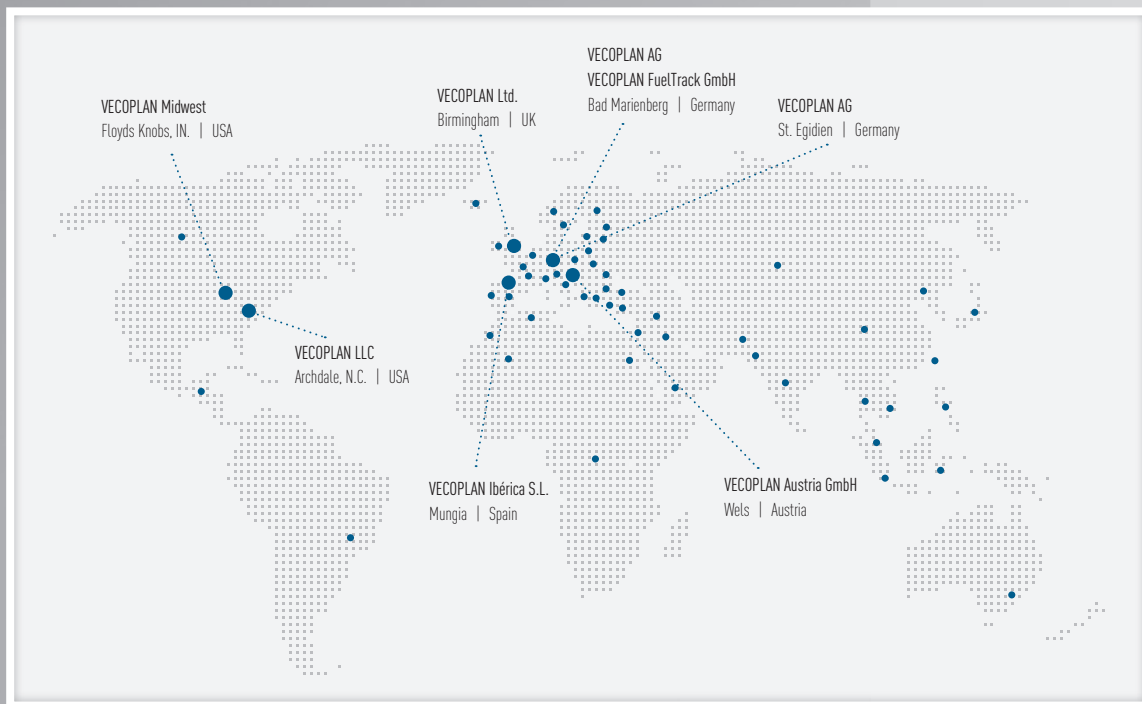




PLASTICS

FOR SOME, IT IS JUST THAT –  
FOR US, IT IS A RESOURCE

**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.

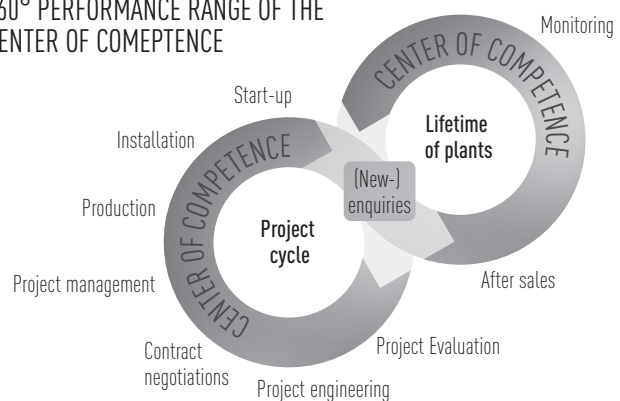


## MASTERMINDS – POWER FOCUSED

The plastics market is one with a global outlook and presence; the markets are in a constant state of flux, and not only as a result of internationalisation. We at VECOPLAN specialise in the development and production of high-quality plants and machinery for the shredding, conveying and processing of plastics.

Our knowledge and experience are concentrated in our Center of Competence, which keeps a close watch on developments in the Plastics market segment. 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 COMPEENCE





# THE RIGHT SOLUTION FOR EVERY MATERIAL



Plastic fibres and textiles



Large-diameter pipes



IBC transport containers



Production waste



Films and foils



Plastic fibres



Large containers



Small-diameter pipes

## Solutions for the shredding of:

- Fibres, textiles, films and foils, pipes, hollow parts, purgings and sprue fragments

VECOPLAN provides a number of innovative technical solutions from a single source for the necessary processing of plastics for recycling. The systems and components VECOPLAN manufactures and sells are used for shredding, conveying, screening, separating and storing plastics. The development and manufacture of plants in the areas of plastics processing and recycling is technology-intensive. The shredding technology is often the nucleus of the processing plants.

The material obtained from shredding is subsequently used directly or indirectly for further processing in the following areas:



Shredded plastic film



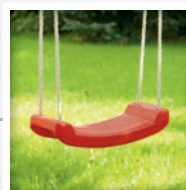
Pipe extrusion



Film manufacturing



Blow moulding



Injection moulding

## PLASTIC IS VERSATILE – JUST LIKE OUR TECHNOLOGY

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

We at VECOPLAN carry the responsibility and dedicate all our knowledge and abilities to the processing of plastics using ultra-modern shredding technology to ensure effective and useful recycling.

Our shredding machines are available in an array of configurations to make them suitable for our customers' specific applications. Our slow-running VAZ shredders are ideal for

pre-shredding plastics into different shapes and sizes. The shredders are individually adapted to the customer's needs. VECOPLAN technology offers not just solutions for soiled plastics, films and fibre materials and hollow parts, but also for thick-walled pipes, purgings and sprues.

We have the perfect processing solution for each and every application.

## 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. It is a field we have specialised in ever since the company was founded in 1969. With six types of shredder which differ fundamentally in their structure and form of shredding, we have the appropriate and perfectly tailored shredding technology available for all kinds of material.

## Conveying



Example: Belt conveyor

## CONVEYING TECHNOLOGY – TAILOR-MADE

We have all of the belt, chain, screw and trough conveyors to get your material moving. Our product range includes reliable products, optimised for bulk material and piece goods, which help you to convey plastics and all other raw and waste materials to their proper destination.

## Screening



Example: Oscillation screen (VSS)

## GETTING THE MOST OUT OF EVERYTHING

We have the oscillation, disc and star screeners to achieve a level of sorting which would be difficult to achieve manually. A choice of star and disc screening machines is available for sorting out overlengths and large fractions, fines and contaminants, as are up to 3-deck circular oscillation screening machines, which are capable of separating material into up to 4 different fractions on screening areas measuring up to 9 m<sup>2</sup>.

## Separating



Overbelt magnetic separator (VÜB)

## FOCUSING ON THE ESSENTIAL

Our separating technology removes everything from your plastics which could cause contamination or damage in your process chain. With their state-of-the-art magnet, sensor and air technology, our overbelt magnetic separators, metal detectors and air separators are indispensable parts of your process.



## Storing

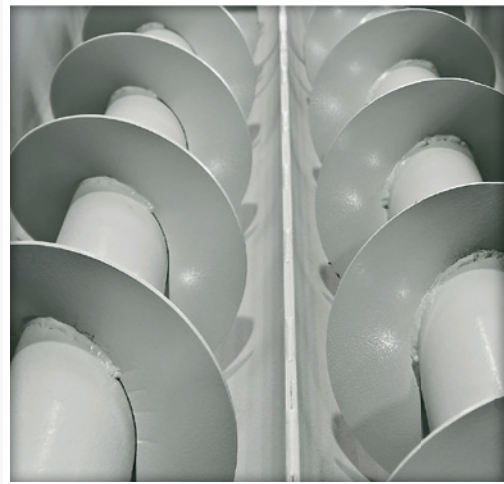


Example: Loading and unloading conveyor (BEF)

## STORAGE IS NOT AN ART – IT IS A SCIENCE

With our machines, it is possible to fill and discharge storage boxes with a capacity of up to 1,300 m<sup>3</sup> per box. We also supply uniquely efficient technology for continuous 24-hour discharging that can be used for loading and unloading vehicles from storage boxes, and also for discharge from bunkers. We have loading and unloading conveyors, push and pull rod dischargers, and drag chain conveyors, which means state-of-the-art filling and emptying.

## Dosing

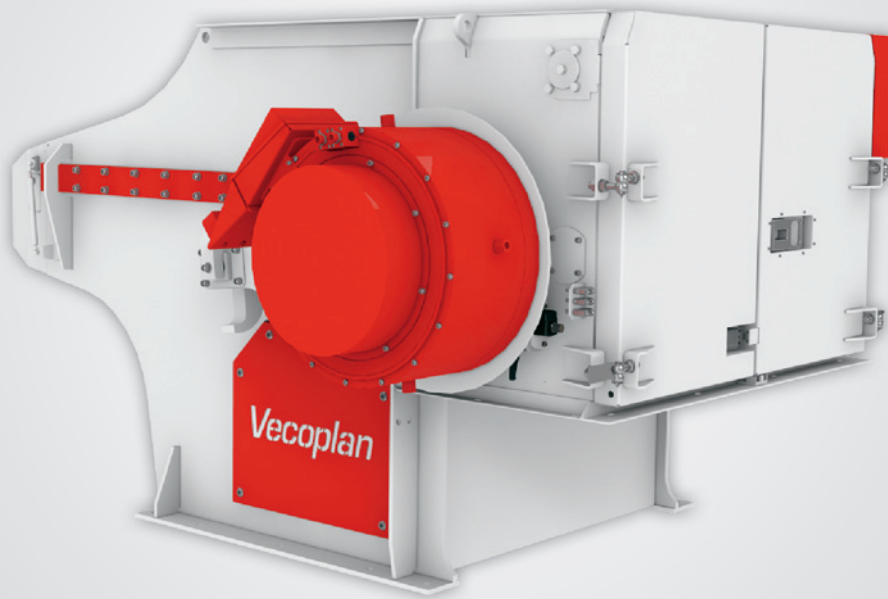


Example: Screw conveyor for dosing

## SUPPLYING THE EXACT MEASURE REQUIRES THE RIGHT TECHNOLOGY

We offer highly efficient technology for the regulated feeding of input material and shredded materials. Precise dosing is ensured via vibration technology and screw dischargers or push rod dischargers. We develop customised systems which are perfectly tailored to the customer's needs.





## SHREDDING IS OUR CORE COMPETENCE

Our customers benefit from our experience in shredding technology, which has been accumulated over many years. It is a field we have specialised in ever since the company was founded in 1969 and today we are an international market leader. We are constantly developing machinery to fulfil the individual requirements of our customers.

We have come up with a number of developments in recent years based on the demands of the market and various customer-specific materials. Rotors for films and filaments, special solid bearings for plastics applications, energy-saving and variable-speed drives, a bridge-breaker for the effective shredding of hollow parts and baled material, rotor cooling for materials with a low melting point, a lowering counter knife for the removal of tramp materials from the input material, pneumatic swing-up screens and blade clearance adjustment.

All of these options are available today in the new generation of VECOPLAN shredders. Our engineers combine them with the complete VECOPLAN scope of supply to form a functioning unit.

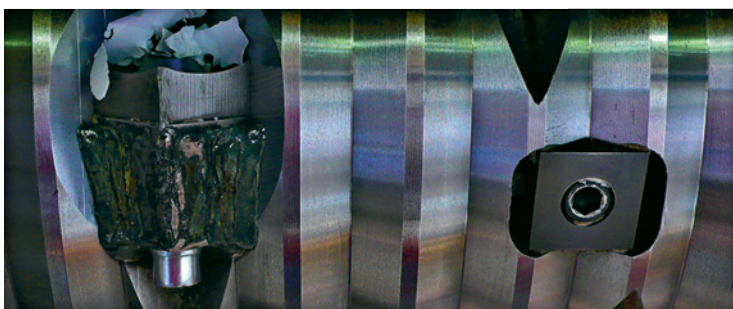
Where customers require the entire value chain to run smoothly, VECOPLAN, being a system supplier, is a reliable partner. From plastics processors to recyclers, our shredders offer impressive throughput, low energy consumption, low wearing part costs, low maintenance costs and maximum consistent availability.

## 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 in the worldwide market.

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. Our engineers and designers are continuously working on concepts and effective solutions for even the toughest assignments.



### Film and fibre rotor

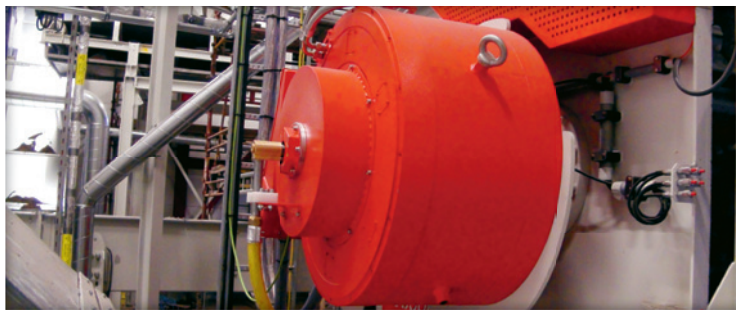
Developed and patented by VECOPLAN for shredding the toughest feed-stock, e.g. highly tear-resistant plastic fibres, fabrics such as airbags and Big Bag material, textiles, ropes and nets as well as challenging films, such as Stretch, which tend to coil.



### Flipper

"Pneumatic-lowering counter knife"

- Compressed air springs keep the counter knife free of play and centred in the working position
- On sudden impact with tramp material, the counter knife bounces smoothly without tilting
- Pressing a button lowers the counter knife to allow easy removal of the tramp material
- Rotor and tramp material are therefore unobstructed and easy to access – thereby avoiding serious consequential damage



## HiTorc®

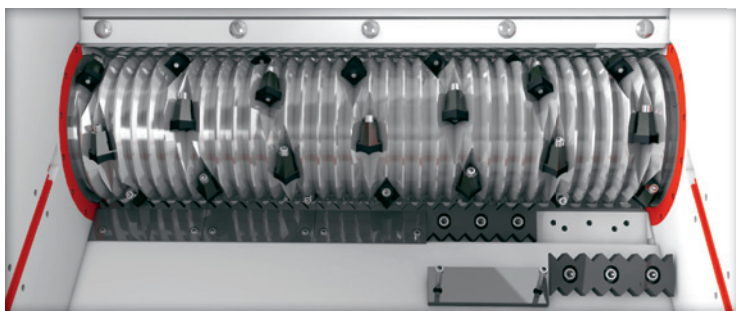
Revolutionary shredding technology

- Direct drive motor/permanently controlled synchronous motor
- Greater throughput – lower consumption
- Energy saving of approx. 50 % with pre-shredders
- Current peaks are roughly halved (compared with asynchronous motor)
- Compact / quiet / low-maintenance



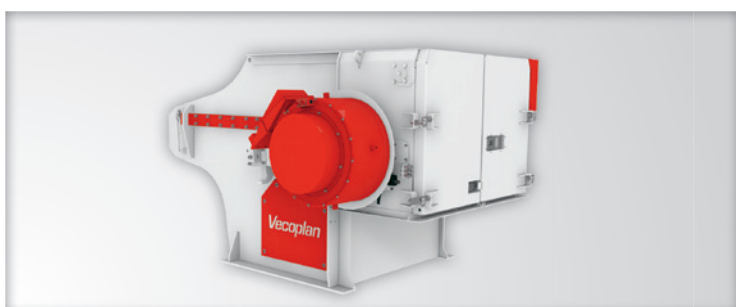
## Swing-up screen

- Automatic swing-up screen carriage for easy access when changing material, cleaning and maintaining the machine
- For extremely easy screen changing if different particle sizes are required



## Segmented counter knife

- Adjustable counter knife for optimal blade clearance when shredding films and fibres
- Giving higher throughput and longer cutter wearing times



## VAZ New Generation

Options:

- Adjustable counter knife
- Swing-up screen
- Film and fibre rotor
- Robust rotor bearing, with minimal wear
- HiTorc® (energy-saving)
- Deluxe package including swing-up screen and adjustable counter knife

# COMPLETE INSTALLATION OF COMPLEX PLANTS



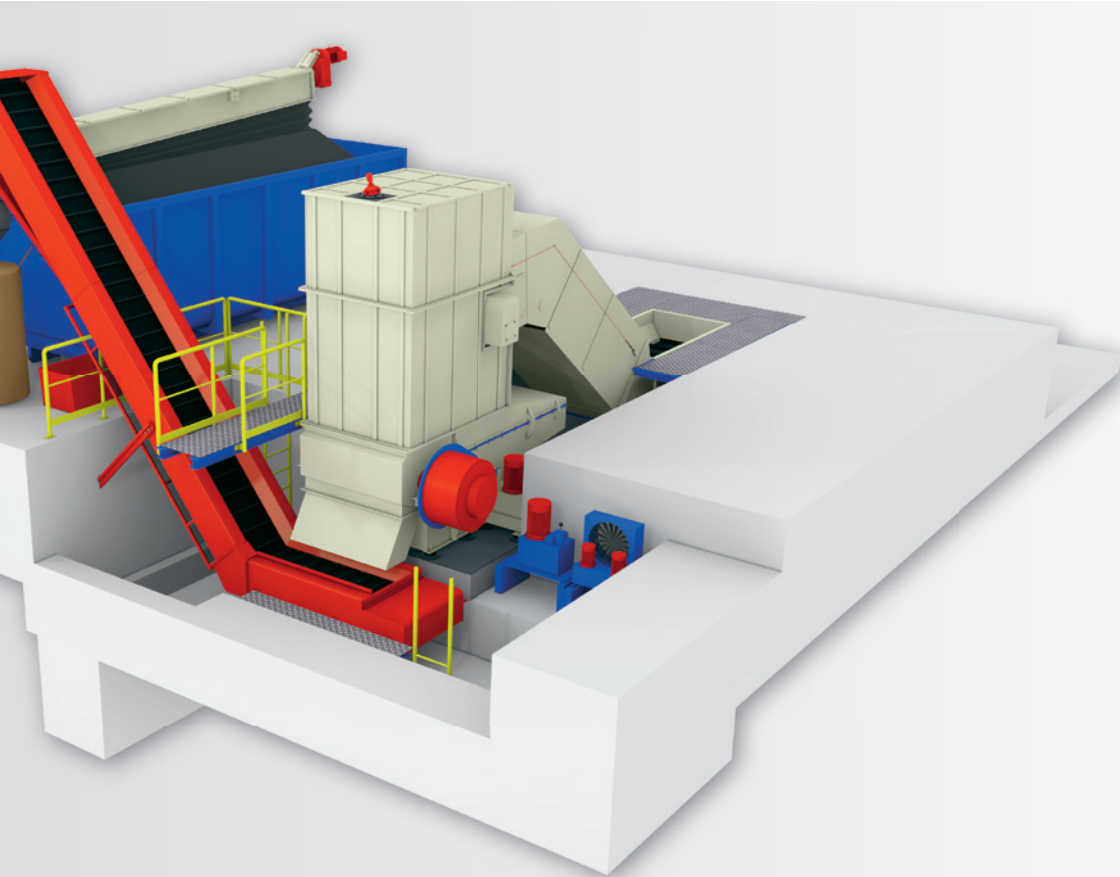
## Electrical engineering tasks

- 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

Plastic is versatile. Each and every plastic is individually produced with the characteristics required for its application. But plastics can be reborn and perfectly well recycled after initial use. We at VECOPLAN have the know-how to see that all plastics are used for practical purposes.

We offer solutions and have the perfect system for every application. Plastics recycling represents the state-of-the-art in environmental technology, and calls for immense expertise from engineers and designers.

VECOPLAN is an international provider of holistically designed systems and plants to the global recycling industry. Our service portfolio, from planning to commissioning, includes the complete range of systems technology. We configure shredding, bunker,

conveying and storage systems in conjunction with our customers according to their individual requirements and to the highest quality standards.

In addition, our professional project management service ensures that our customers have a competent team on side to come up with the optimal solution to their complex briefs. Our customers avail of our systems competence. The durability of a VECOPLAN plant is the product of perfect design and rugged build, resulting in plants and systems with exceptionally long service lives.

# VECOPLAN POWER: AN EFFECTIVE SYSTEM

We help you to process your plastics production waste economically and, as such, to conserve resources. By defining the right plant concept from the outset, our specialists lay the foundation that ensures the effectiveness of the overall system.

VECOPLAN plastics shredding with the VAZ means safe, efficient processing of plastics of all sorts, shapes and sizes. Time and time again, we take on new challenges in consultation with our customers, and offer solutions for even the most difficult feed materials.



#### VECOPLAN System:

- Plastic containers and purgings

#### VECOPLAN Systems:

- Pipes and flange pieces
- Plastic pipes
- Pipes, purgings and coupling sleeves

#### VECOPLAN Systems:

- Pump & valve housing
- Loose films, rolls of film, and film edge strips
- Plastic containers

#### VECOPLAN System:

- Plastic containers and purgings

#### VECOPLAN System:

- Faservties, BCF, Monofilament

#### VECOPLAN System:

- Films, hollow parts, hard plastics

Extract of reference list



## SUCCESSFUL PROJECTS

Around the world we have completed projects with our customers and partners in the field of plastics pre-processing and processing. Some "best practise" examples:

- VECOPLAN System – Faservlies, BCF, Monofilament  
Capacity: 1,200-4,000 kg/h
- Rikutec – Large containers and purgings  
Capacity: 800-2,000 kg/h
- VECOPLAN System – Pipes and flange pieces  
Capacity: 500 kg/h
- VECOPLAN System – Plastic pipes  
Capacity: 600-1,200 kg/h
- VECOPLAN System –  
Pipes, purgings and coupling sleeves  
Capacity: 300 kg/h
- VECOPLAN System – Pump & valve housing  
Capacity: 800-1,000 kg/h
- VECOPLAN System –  
Plastic containers and purgings  
Capacity: 600-1,500 kg/h
- VECOPLAN System –  
Plastic containers and purgings  
Capacity: 600-1,500 kg/h
- VECOPLAN System – Loose films,  
rolls of film and film edge strips  
Capacity: 800 kg/h
- VECOPLAN System – Plastic containers  
Capacity: 600-900 kg/h
- VECOPLAN System – Films,  
hollow parts, hard plastics  
Capacity: 2,200 kg/h



# YOUR JOB IS OUR RESPONSIBILITY



Original parts



Service



Contact



An overview of our service packages:

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

