ALL-IN-ONE SOLID MATTER PROCESSING

The RedUnit system combinations for turning solid matter into pumpable media

VOGELSANG
ENGINEERED TO WORK


VOGELSANG

CUTS A BIG DEAL DOWN TO SIZE

The RedUnit: adaptable, heavy-duty machines mix for particle reduction and pumping

The RedUnit is Vogelsang's answer for any process that requires the shredding and pumping of rough media, preferably in one step. A variable system individually put together to exactly match the client's demands, which Vogelsang has developed especially fort the toughest applications in the industry. With the help of a RedUnit, dry solids of a high volume are either roughly shredded or finely ground – depending on the respective demand – to then be easily treated for further uses.

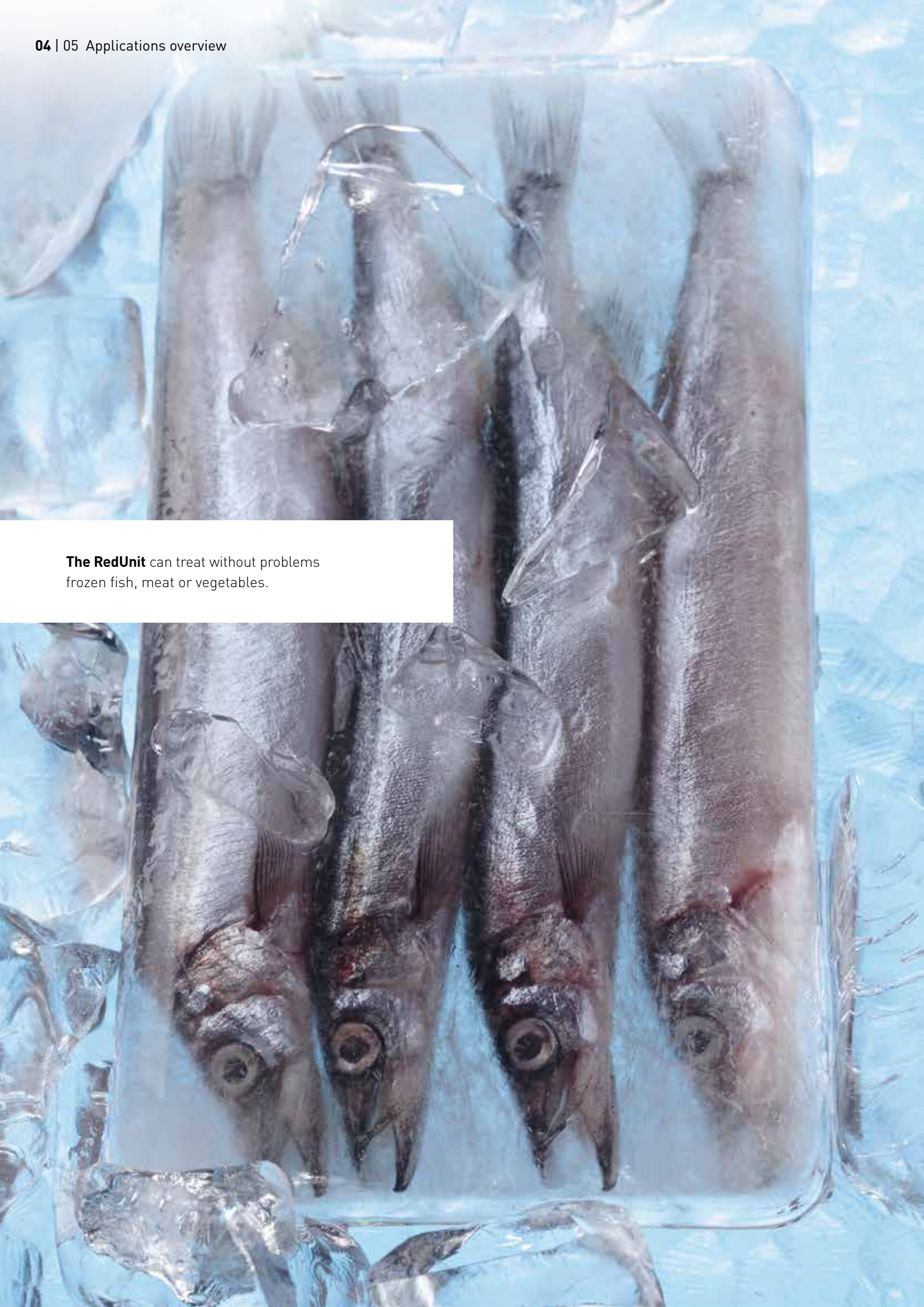
Energy efficiency and minimum maintenance
The RedUnit is a complete system so there is no need for additional pumps or screw conveyors between the different shredding stages. This leads to lower electricity consumption. Vogelsang uses the most advanced sealing technology in their products: the Quality Cartridge. Thanks to its unique construction, it incorporates all seal components, thus ensuring that all elements are replaced when the cartridge is changed.

Plug and play system (optional)
The RedUnit includes an intelligent control system, developed by Vogelsang. Thanks to this, the equipment can be installed in any plant by simply connecting an energy cable. All components of the RedUnit can be visualized on a touchscreen with their technical features, which can be easily set up in accordance with the needs of each application.

The RedUnit can treat many different media, such as dry or contained in a fluid as well as in the waste part of several industries, and for production uses.

Benefits of the RedUnit

- Individual engineered unit
- Compact and sturdy
- High availability thanks to quick-and-easy service
- Added safety due to cartridge mechanical seal technology
- Low electricity consumption
- Optional: measuring and control technology
- Optional: stainless steel for demanding applications



The RedUnit can treat without problems frozen fish, meat or vegetables.

Typical applications for Vogelsang particle size reduction technology:

Organic waste
Vegetable and fruit waste,
bread waste

Agricultural crops
For example, sugar beets,
carrots, cabbage

Abattoir waste
From chickens, pigs and cows: stomach,
intestines, hides, bones

Fish waste
Heads, bones

Disposal industry
Mixed organic waste from supermarkets, product
depackaging, airplane waste

Other industries
Grinding requirements in other industries, e.g., chemical,
construction, leather

SMART COMBINATION, PERFECT BUILD

The RedUnit components and their possible arrangements

Individual components

XRipper® XRL
The XRipper XRL provides the efficient treatment of bulk material and solid matter. It reduces possible blockages and makes maintenance fast and easy. The XRipper XRL in the RedUnit can be usually used as a first reduction step for large-volume material.

RotaCut® RCX
The macerator RotaCut is the ideal solution for fibrous matter, as well as for heavy matter in pump media. The RotaCut RCX can be usually used for fibrous media containing foreign bodies, or when a reduction in fine solids is needed.

CC series
The CavityComfort progressive cavity pump is perfect for highly viscous and abrasive media, and media with a high proportion of large foreign matter. The CC series in the RedUnit can be usually used as a discharge pump.

VX series
Vogelsang rotary lobe pumps from the VX series are positive displacement pumps designed to be especially resistant and easy to maintain. The VX series in the RedUnit can be usually used as feeding pumps when more fluid is needed.

Some possible combinations

XRipper® XRL

The easiest solution consists of a grinder XRipper XRL. It includes also the required control system used to optimize the efficiency of the complete unit. This solution is used when the customer needs a size reduction in big amounts of bulk material and solid matter. It can be used, for example, for grinding slaughterhouse waste, potatoes and sugar beets, or even for frozen vegetables.

XRipper® XRL + VX series

We can deliver a system consisting of a grinder XRipper XRL plus a rotary lobe pump from the VX series. This is a perfect solution for slaughterhouse applications with smaller throughputs and smaller hopper requirements, for example, chicken or ducks, or any other small waste without big bones or hooves.

XRipper® XRL + CC series

One of our most demanding solutions consists of a grinder XRipper XRL plus a progressive cavity pump of the CC series. This solution is used when there is a need for pumping after the first grinding stage or when the medium to pump is less liquid and has a higher dry-matter content. This combination can be used, for example, for grinding fish heads and bones to produce fish flour and oil.

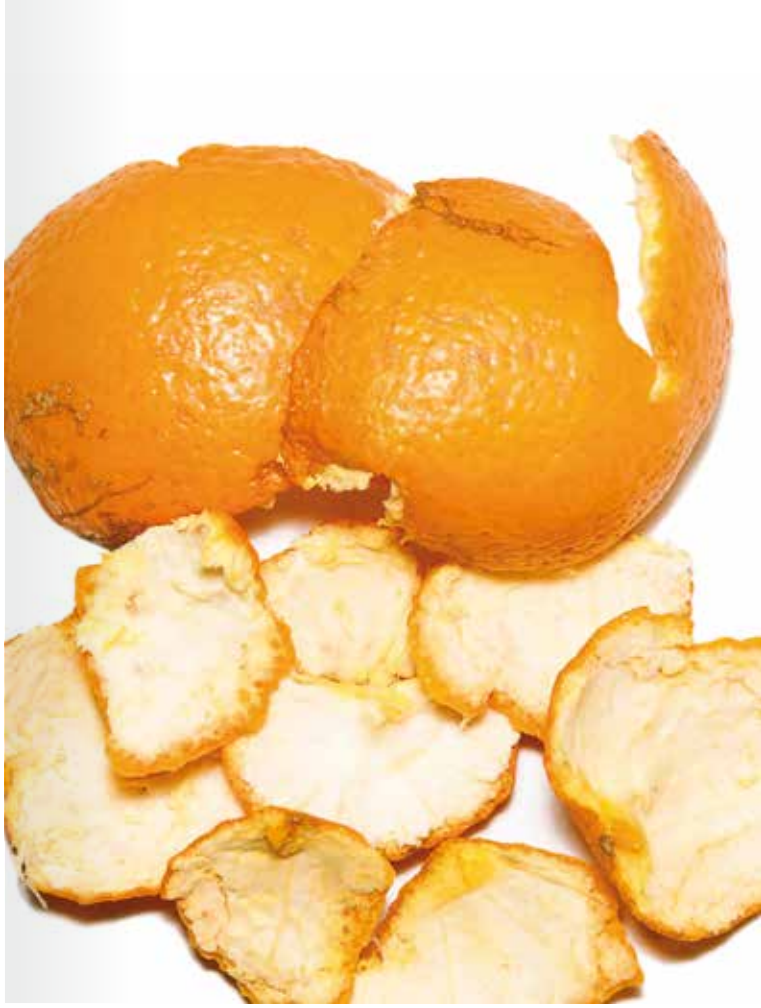
XRipper® XRL + CC series + RotaCut® RC

For some applications there exists the possibility to supply the system XRipper XRL plus CC series with an included down-stream macerator RotaCut. This is the perfect solution for supplying an even particle size in small spaces with a maximum flexibility.

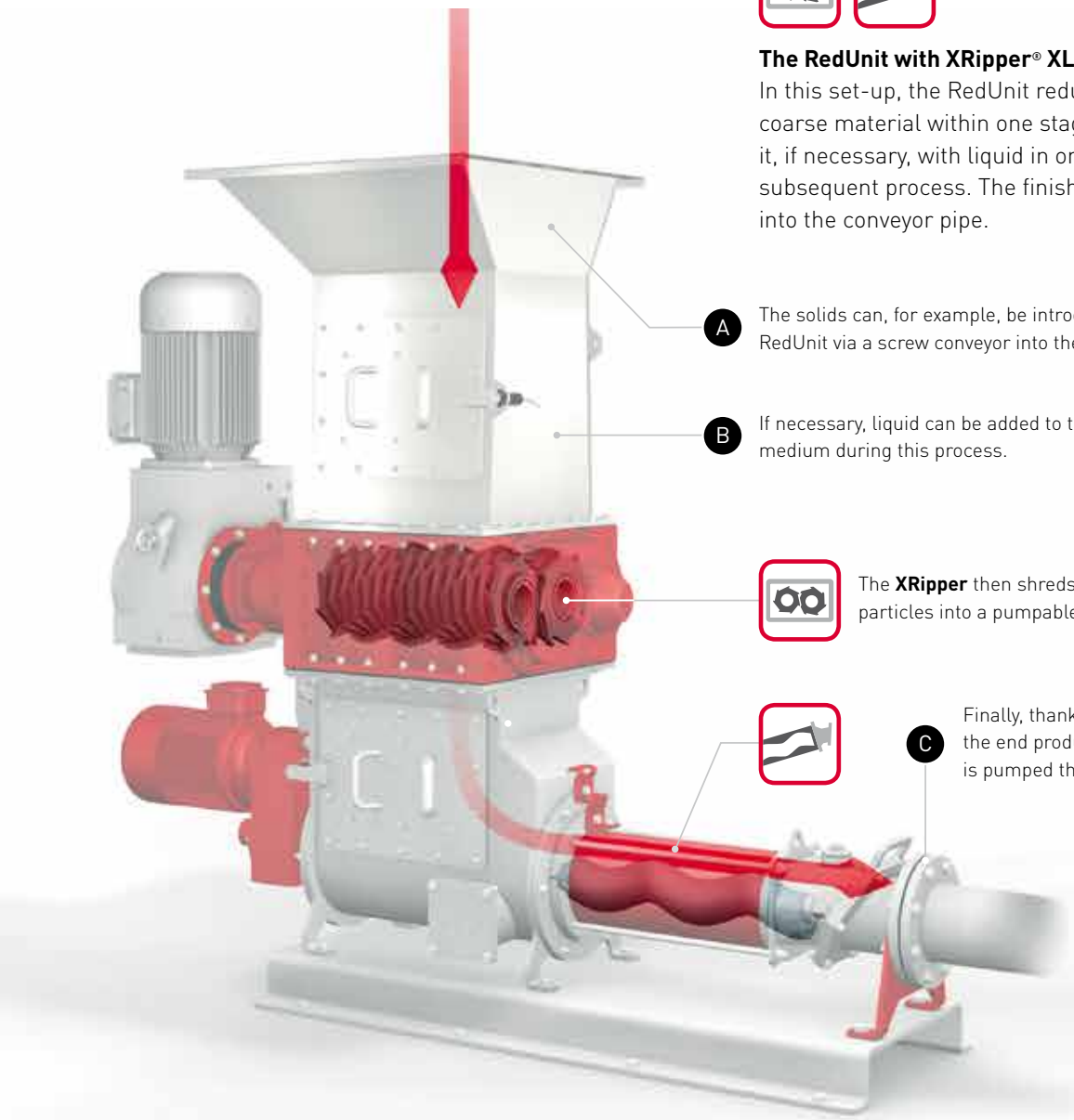
XRipper® XRL + RotaCut® RCX + CC series

The RedUnit composed by a grinder XRipper XRL, a macerator RotaCut RCX and a progressive cavity pump of the CC series is one of the most complete solutions we offer. It has two steps of grinding and a further of pumping, and it is ideal for very fluid mediums with requirements for a small particle size, such as slaughterhouse waste. It is a very compact and robust solution.

We can offer many other solutions, with for example, an additional downstream RotaCut when there is need of further size reduction. We design every unit customized to meet the requirements of each application. Contact us for an individual engineered solution!



INDIVIDUAL STRENGTHS, OPTIMAL USAGE



The RedUnit with XRipper® XLR + CC series pump
In this set-up, the RedUnit reduces the particle size of coarse material within one stage of grinding and mixes it, if necessary, with liquid in order to prepare it for the subsequent process. The finished product is then pumped into the conveyor pipe.

A The solids can, for example, be introduced to the RedUnit via a screw conveyor into the **hopper**.

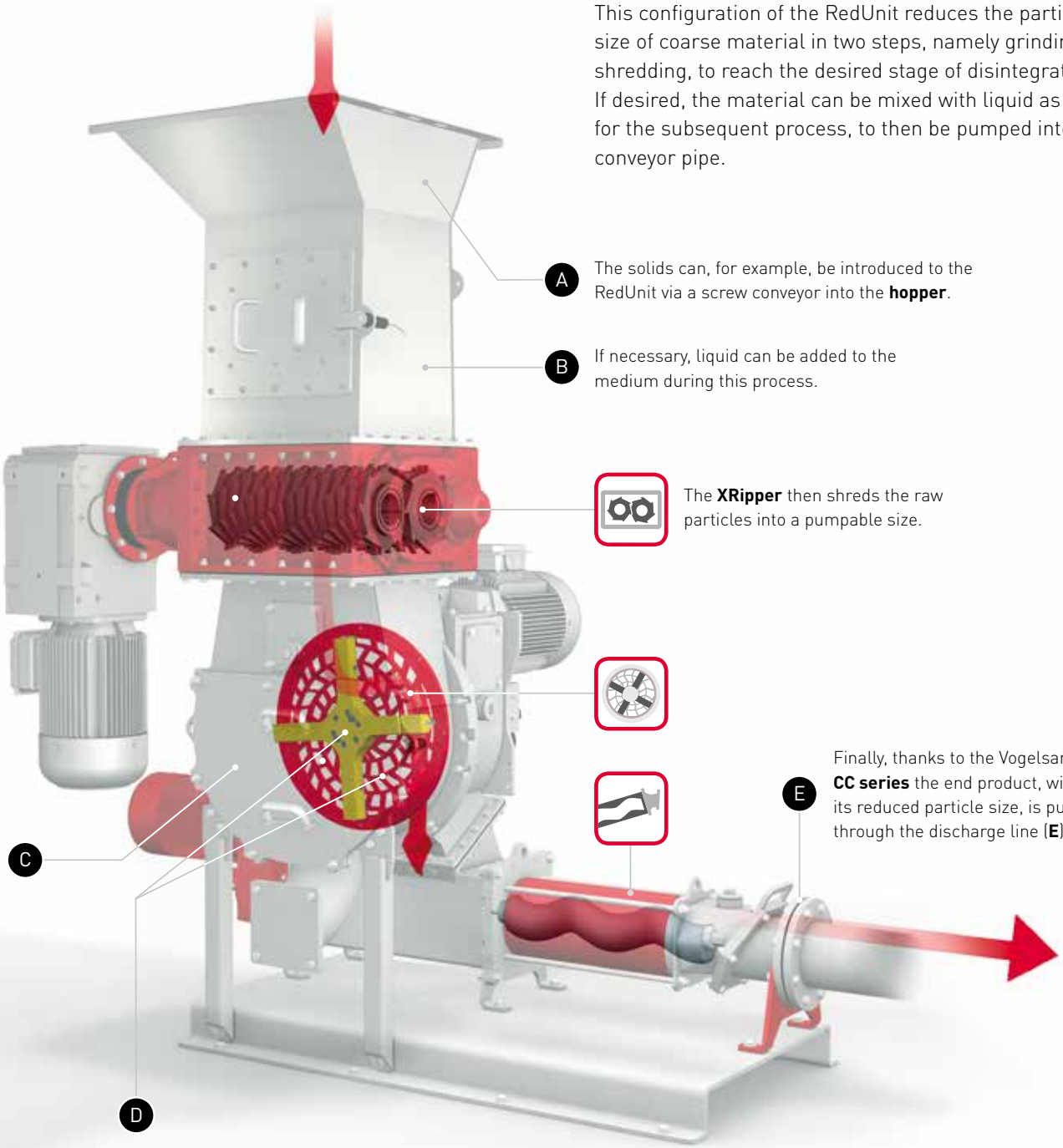
B If necessary, liquid can be added to the medium during this process.

The **XRipper** then shreds the raw particles into a pumpable size.

C Finally, thanks to the Vogelsang **CC series** the end product, with its reduced particle size, is pumped through the discharge line (**C**).

The RedUnit with XRipper® XLR + RotaCut® RCX + CC series pump

This configuration of the RedUnit reduces the particle size of coarse material in two steps, namely grinding and shredding, to reach the desired stage of disintegration. If desired, the material can be mixed with liquid as well for the subsequent process, to then be pumped into the conveyor pipe.



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Finally, thanks to the Vogelsang **CC series** the end product, with its reduced particle size, is pumped through the discharge line (**E**).

In the mixing area (**C**) of the **RotaCut** the solids that have passed through the XRipper are mixed with the fluid thanks to the rapid rotation of the RotaCut rotor (**D**), and the particle size is further reduced as well as a homogenous mixture with a defined particle size being created.

XRipper XRL

TWISTED FOR MAXIMUM EFFICIENCY

The XRipper® XRL twin shaft grinder with monolithic ripper rotors

The XRipper is at home wherever coarse and high-volume solid matter has to be reduced, whether it is bulk material or coarse matter in fluids. The sturdy twin shaft design is the economical solution to treat solid matter.

Design and operating principle
The XRipper rotors are mounted in an interlocking manner on the shaft, which is itself untouched by the medium. The input material passes through the XRipper largely unobstructed. Organic waste, bones or plastic is caught by the XRipper rotors and automatically collected and ground: coarse and brittle components are pulverized, while other solid matter is ripped apart. Thanks to the different speeds of the two shafts, the XRipper rotors are self-cleaning. To adjust to the medium and the size-reduction ratio, various XRipper rotors are available with blade widths from 6 mm to 32 mm. The QuickService system allows quick-and-simple execution of all service and maintenance work on-site.

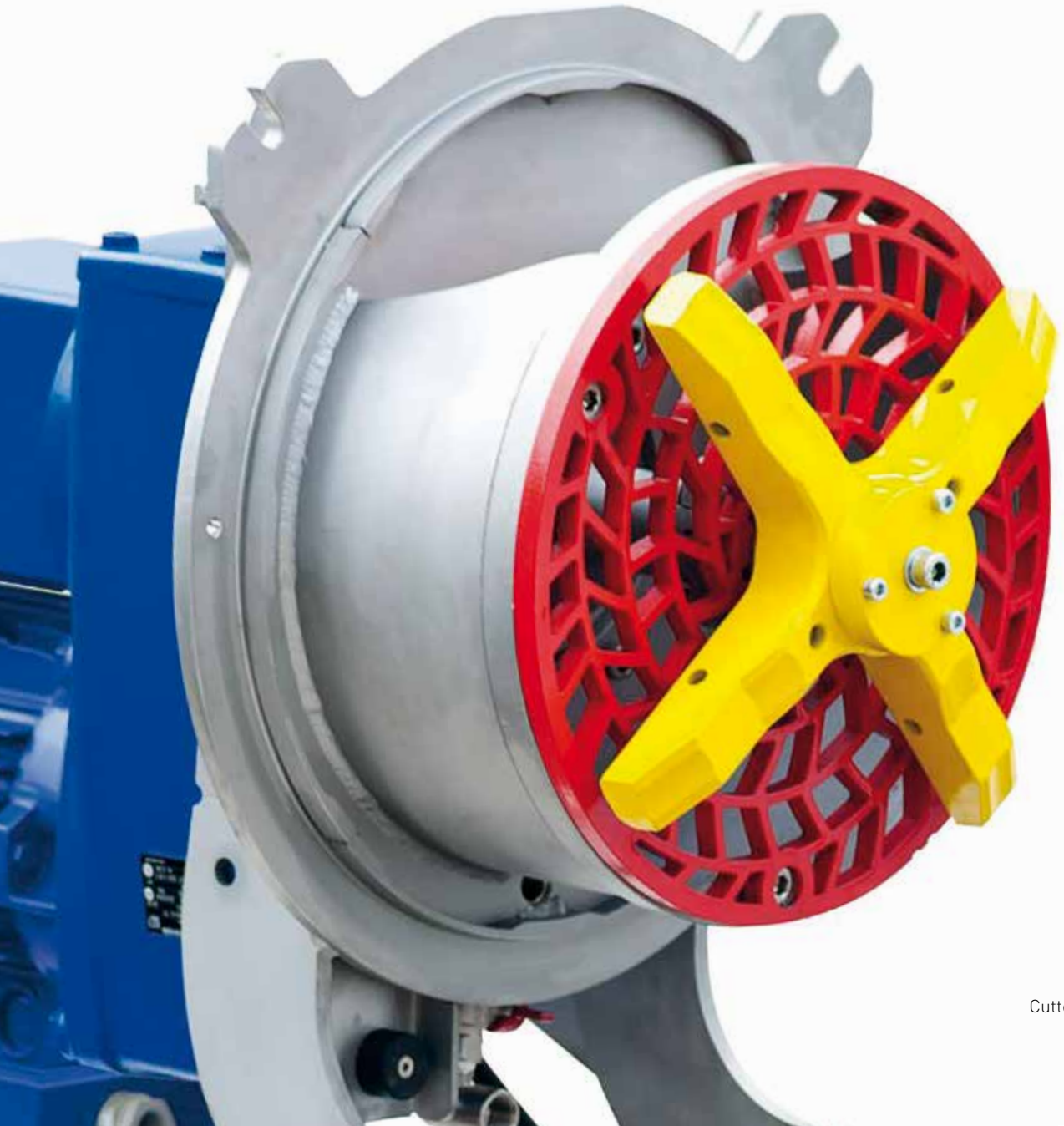
For more power and efficiency: monolithic ripper rotors
The innovative design of the monolithic ripper rotors makes solids reduction with the XRipper particularly economical. Produced from a single block of special steel (stainless steel is also available as an option) they allow for hard, precise multiple cuts, combined with a highly durable, tough core for superior cutting effect and even power transmission from the shaft to the cutting components. The monolithic ripper rotors offer high ease of service. Instead of having to replace many individual cutting components, only between one and a maximum of six XRipper rotors require replacement per shaft. This makes assembly easier and servicing safer.

XRipper® advantages at a glance

- Economical shredding of solid matter such as fruit, vegetables and organic waste
- Sturdy and reliable
- Minimal operation interruptions thanks to straightforward maintenance
- Added safety thanks to cartridge mechanical seal technology

CUTTING-EDGE SYSTEMS GUARDIAN

The RotaCut® macerator with heavy particle separator for finer particle dimensions



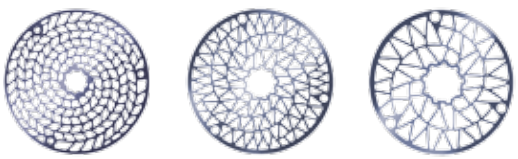
Cutter head with ACC plus

Not all waste materials from food production are suitable for pumping after just one grinding or shredding step. In particular, fish, meat and vegetable waste often contain coarse matter, including particles of plastic or metal. This can lead to malfunctions or failures in downstream pumping elements, which can be prevented by using a RotaCut.

How it works

The RotaCut combines two functions: separating and shredding. While the medium flows continuously through the RotaCut, heavy material such as stones or metal parts are separated out by gravity and then effortlessly disposed of through a cleaning port. In addition, floating and suspended substances within the medium that are only coarsely shredded (fibers, hair, bones, wood, entangled material)
are transported to the cutting screen by the liquid current and shredded by rotating, self-sharpening cutting blades.

Depending on the application, it may be possible to adjust the unit individually to the medium to be pumped and the desired size-reduction ratio by selecting suitable rotor types, cutting screens and separators.



Vogelsang uses its proprietary software to calculate the optimized geometry for every size-reduction ratio. For you this means you always get the best geometry for smooth running, with minimal wear.
The cutting screens are produced from wear-resistant special steel and are reversible.

ACC® – Automatic Cut Control

Automatic Cut Control ensures consistently excellent cutting in the RotaCut. During cutting, it is important for the cutting blades to press against the cutting screen at a constant pressure. This prevents fibers and other coarse matter from slipping under the cutting blades and causing blockages; as a result, ACC automatically adjusts the cutting blades and keeps the necessary contact pressure constant – as high as necessary and as low as possible. This significantly increases the lifetime of the cutting blades and eliminates the need for manual adjustment.

In the ACC plus version, the system also provides information about the condition of the cutting blades. Information about the cutting blades' remaining lifetime is displayed on the unit or it can be transferred to the central control system.

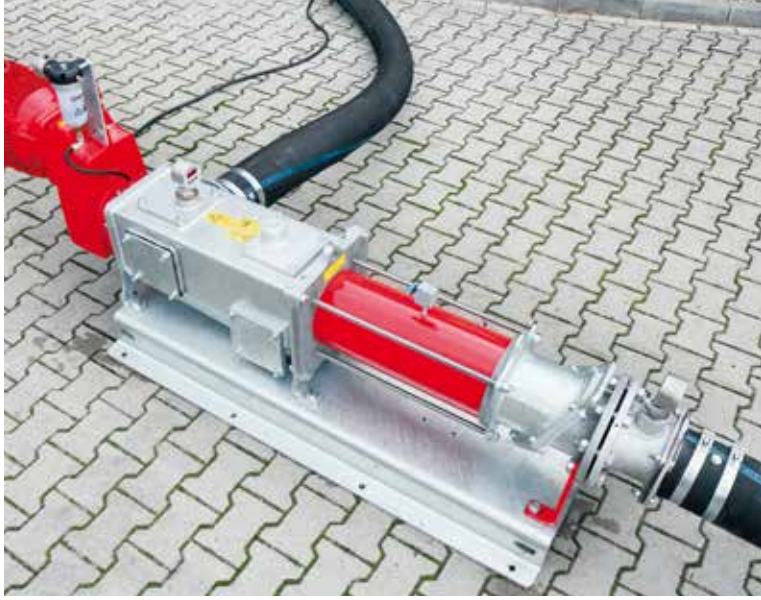
RotaCut® advantages at a glance

- Reliable shredding of fibrous and coarse matter
- Two dimensions particle size down to less than 12 mm guaranteed
- Foreign-matter protection for all downstream system components
- Fluids and suspensions are made more homogeneous and less viscous, requiring less power consumption and increasing the efficiency of the system

ECCENTRIC, YES. COMPLICATED? NO!

The CC series progressive cavity pumps for easy maintenance and strong performance

Progressive cavity pump



With the CC series, Vogelsang has decisively improved the trusted concept of progressive cavity pumps: thanks to their innovative design, the pumps set new standards regarding the ease of service and maintenance.

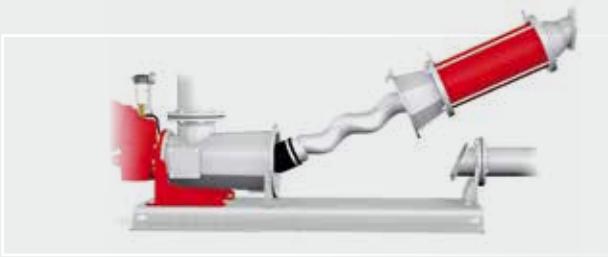
Reliable each and every day
The innovative CC series has been developed for harsh applications in which highly viscous and abrasive media with a high foreign-matter content need to be pumped and where maximal availability is extremely important.

Unique concept for the easiest service
All essential parts, including the seal, can be rapidly and easily replaced, so the pump is quickly ready for use once again. Thanks to the clever pivot mechanism, it is no longer necessary to disassemble pipeline parts to perform service work. The tried-and-trusted cartridge mechanical seal is used as the pump shaft seal. Since it is a pre-mounted mechanical seal, it can be quickly and easily replaced on-site. In contrast to conventional systems, the seal can be replaced without needing to remove the Cardan shaft. When the parallel shaft geared motor is removed, the seal is also accessible from the drive end, where it can be replaced with just a few movements and without opening the pump.

Fast replacement of parts
The CC series offers many options for replacing parts. The stator and rotor can be replaced by an individual unit, as well as the complete rotating assembly (stator, rotor and Cardan shaft).

Replacement step by step
Once the pump unit has been pivoted out, the stator is removed. Next, if necessary, the rotor is replaced – without removing the protective sleeve around the Cardan shaft. The Cardan shaft can then be removed.

Quick servicing: stator and rotor replaced as a unit



Step by step: replacing the stator …

… and rotor subsequently on-site.
All without disassembling pipeline parts

CC series advantages at a glance

- Easy-and-quick service with an extremely compact footprint
- No disassembly of piping
- Seal replacement without opening the pump
- Quality Cartridge mechanical seals
- Sturdy Cardan shaft with protective sleeve

What we offer

We provide solutions in the following sectors:
AGRICULTURE, BIOGAS, INDUSTRY,
TRANSPORTATION, WASTE WATER

Our broad range of products and services

- Consulting and service
- Data management and control technology
- Disintegration technology
- Individually tailored solutions for special applications
- Pumps and pump systems
- Solid matter feeders
- Solids reduction, separators and mixers
- Spreading technology
- Supply, disposal and cleaning

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Vogelsang GmbH & Co. KG
Holthoege 10–14 | 49632 Essen/Oldb. | Germany
Phone: +49 5434 83-0 | Fax: +49 5434 83-10
info@vogelsang.info

vogelsang.info

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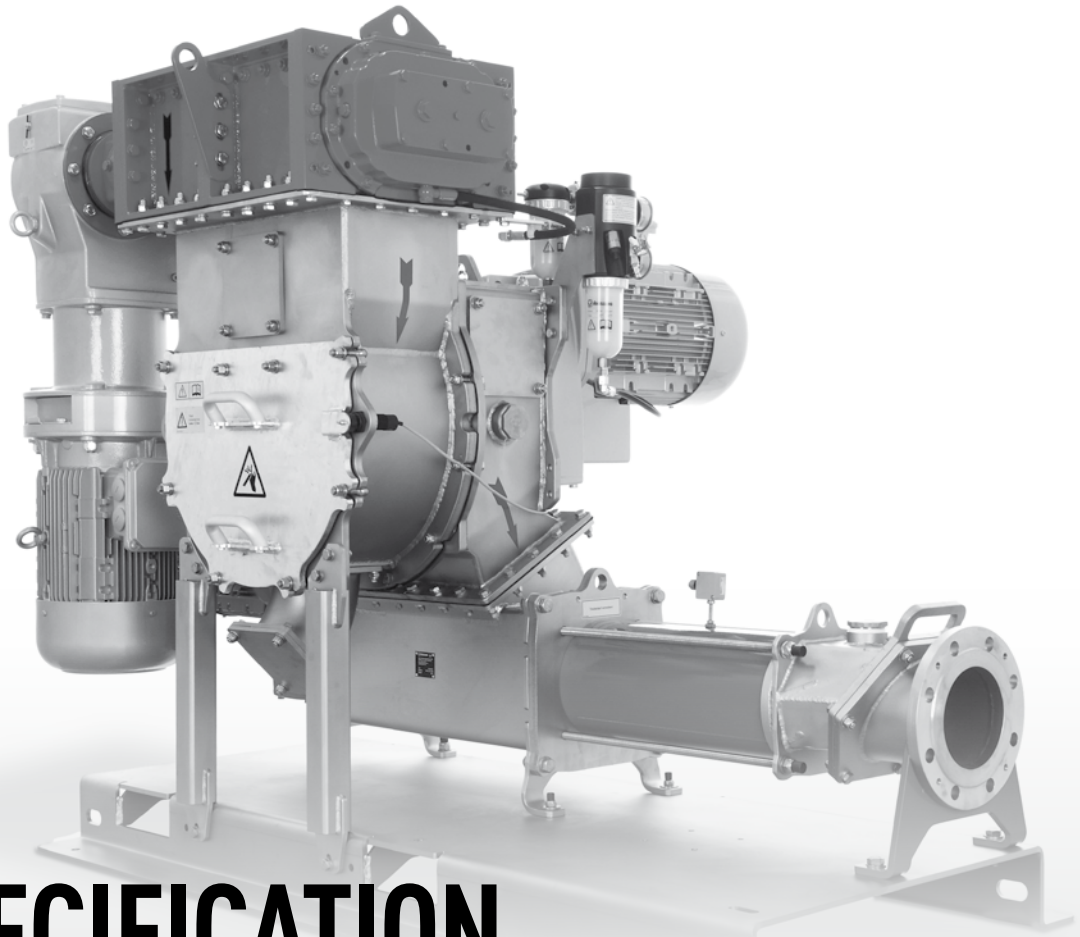

SPECIFICATION

Industry

ALL-IN-ONE SOLID MATTER PROCESSING

The RedUnit system combinations for turning solid matter into pumpable media

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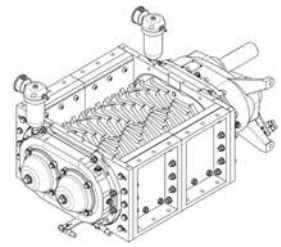
RedUnit combinations



XRipper® XRL

Type	Max. capacity*	Input opening	Installed drive power
	m^3/h	mm (L x W)	kW
XRL136-280QD	10	280 x 320	7.5 – 11
XRL136-560QD	20	560 x 320	7.5 – 11
XRL186-260QD	20	260 x 445	11 – 15
XRL186-520QD	40	520 x 445	11 – 15
XRL186-780QD	60	780 x 445	11 – 15

* Refers to easy-to-reduce solids

XRipper® XRL + CC series

Type		Max. capacity**	Max. operating pressure	Point pressure	Input opening	Installed Drive power	
XRipper	CC series*	m^3/h	bar	bar	mm (L x W)	XRipper kW	Pump kW
XRL136-560QD	CC44-M1	15	4	6	560 x 320	7.5 – 11	4 – 7.5
XRL136-560QD	CC44-M2	15	8	12	560 x 320	7.5 – 11	4 – 7.5
XRL136-560QD	CC55-M1	30	4	6	560 x 320	7.5 – 11	5.5 – 11
XRL136-560QD	CC55-M2	30	8	12	560 x 320	7.5 – 11	5.5 – 11
XRL186-520QD	CC44-D1	30	4	6	520 x 445	11 – 15	4 – 7.5
XRL186-520/780QD	CC55-D1	60	4	12	520/780 x 445	11 – 15	5.5 – 11
XRL186-520/780QD	CC66-M2	55	8	12	520/780 x 445	11 – 15	11 – 22
XRL186-520/780QD	CC66-D1	105	4	6	520/780 x 445	11 – 15	11 – 22

* D1/M1: single-stage progressive cavity pump, M2: two-stage progressive cavity pump

** Maximum theoretical capacity. In practice, the capacity is normally lower, depending on pressure difference, medium viscosity and pump installation. We would be happy to configure the best progressive cavity pump for your application with the help of our computer-assisted sizing software.

XRipper® XRL + RotaCut® RCX

Type		Max. capacity*	Input opening	Installed drive power	
XRipper	RotaCut	m^3/h	mm (L x W)	XRipper kW	RotaCut kW
XRL136-560QD	RCX-48G	20	560 x 320	7.5 – 11	12.1
XRL186-520QD	RCX-58G	40	520 x 445	11 – 15	16.5

* Refers to easy-to-reduce solids

XRipper® XRL + RotaCut® RCX + CC series

Type			Max. capacity**	Max. operating pressure	Point pressure	Input opening	Installed drive power		
XRipper	RotaCut	CC series*	m^3/h	bar	bar	mm (LxW)	XRipper kW	RotaCut kW	Pump kW
XRL136-560QD	RCX-48G	CC55-M1	15	4	6	560 x 320	7.5 – 11	12,1	5.5 – 11
XRL136-560QD	RCX-48G	CC55-M2	15	8	12	560 x 320	7.5 – 11	12,1	5.5 – 11
XRL136-560QD	RCX-48G	CC66-M1	30	4	6	560 x 320	7.5 – 11	12,1	11 – 22
XRL136-560QD	RCX-48G	CC66-M2	30	8	12	560 x 320	7.5 – 11	12,1	11 – 22
XRL186-520QD	RCX-58G	CC55-D1	30	4	6	520 x 445	11 – 15	16,5	5.5 – 11
XRL186-520QD	RCX-58G	CC66-D1	60	4	12	520 x 445	11 – 15	16,5	11 – 22

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