



VOGELSANG
ENGINEERED TO WORK

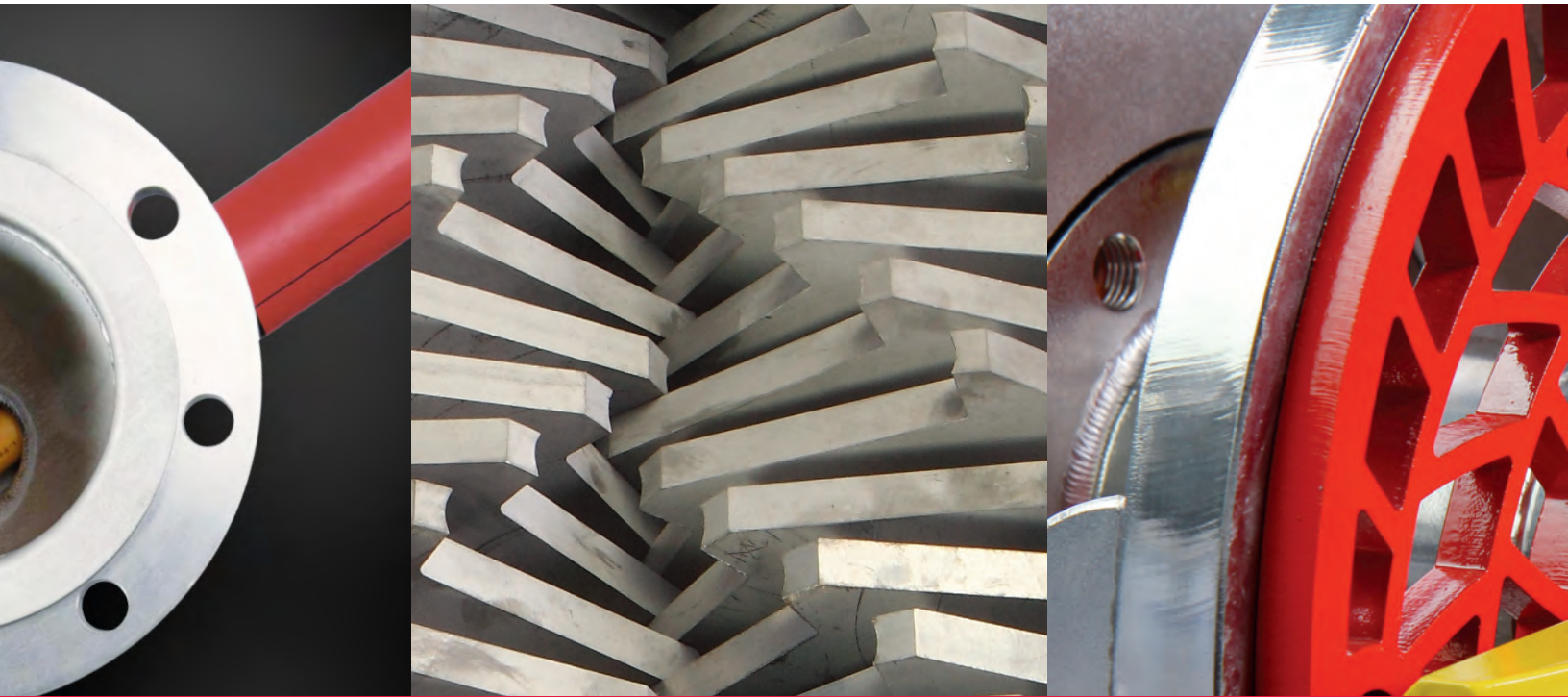


PUMPING & GRINDING PRODUCTS DESIGNED FOR WASTEWATER APPLICATIONS

Wastewater Treatment

Robust Products designed for viscous sludge.





ROBUST, RESILIENT, RELIABLE!

Robust products for tough wastewater applications

Vogelsang has been a leader in the design and manufacture of wastewater pumping and processing products for over 80 years. During this time, we've been responsible for most of the major innovations in positive displacement rotary lobe pump design and the invention and development of the RotaCut Inline Grinder. Additionally we offer the X-Ripper twin shaft grinder and the BioCrack High Voltage Sludge Lysing system. Vogelsang is proud to build its products in the US and also to service thousands of installations and satisfied customers all over the world.



VX series Rotary Lobe Pumps



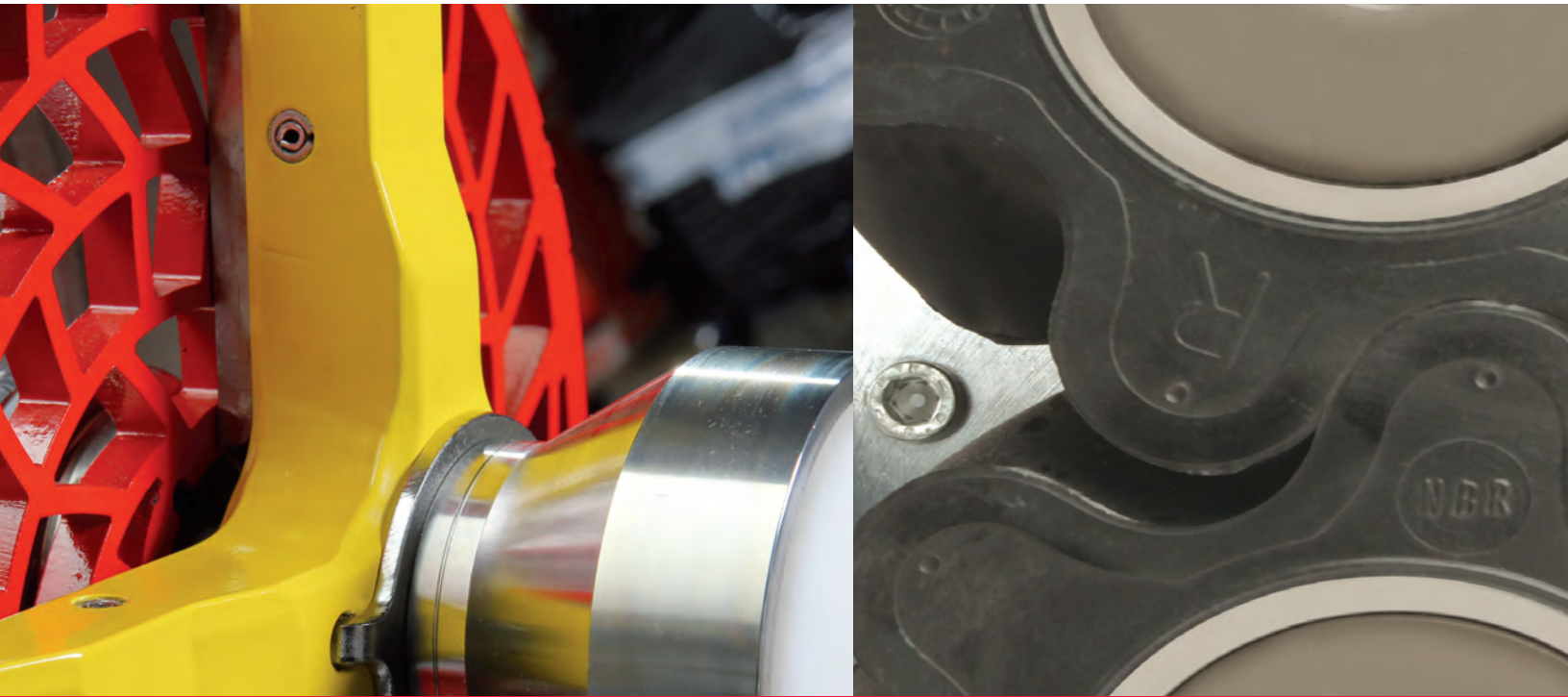
RotaCut Inline Grinders



X-Ripper Inline Grinders



BioCrack Sludge Lysing System



WORKING WITH VOGELSANG

Cutting Edge Materials

Every application of our products requires ideal material choices to optimize performance and minimize wear. Wherever there is contact or friction between moving parts, we have developed combinations of materials that will optimize the equipment for your specific needs. This benefits you both in equipment life and in product performance. Our wear parts come in several material options to get you the best possible life.

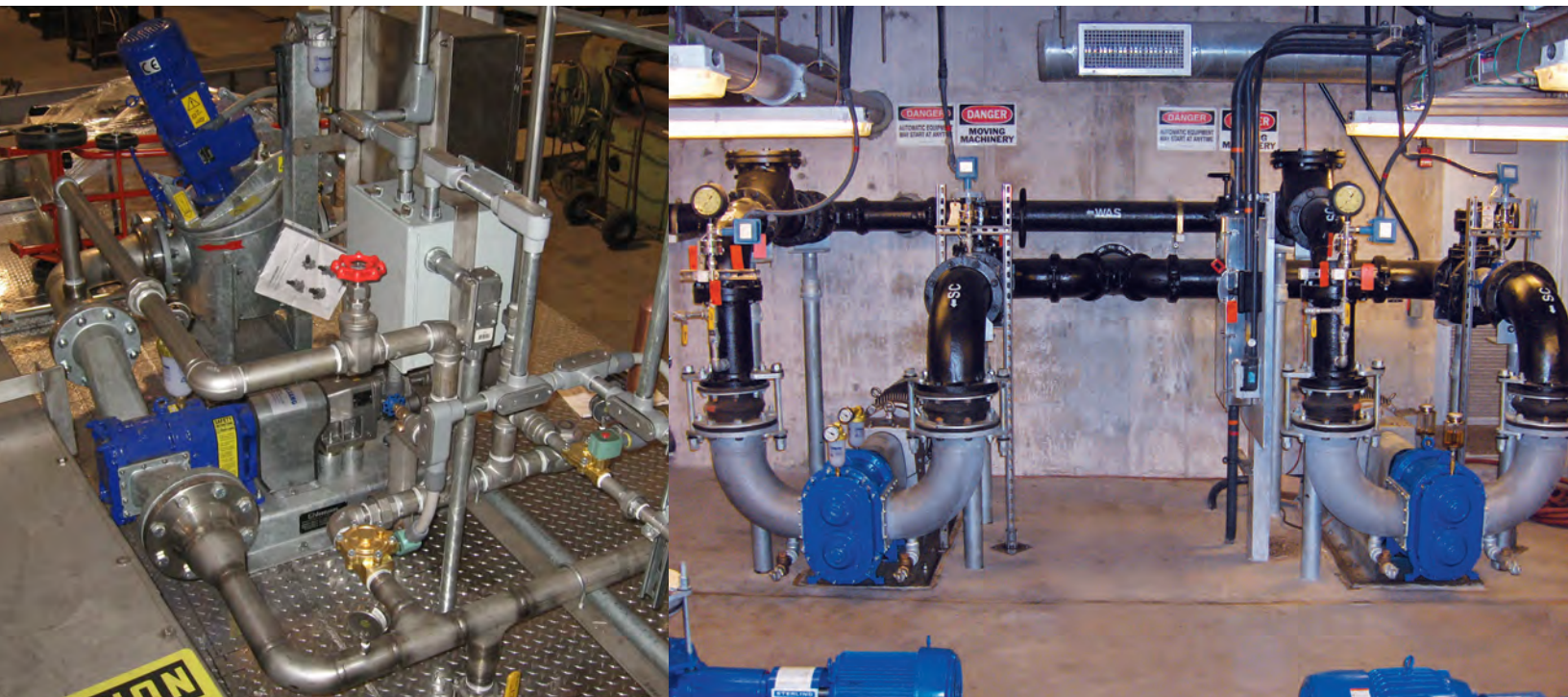
Quality Custom Construction

Our production team will design your equipment to the most effective size and configuration for your application. We can build a compact unit to fit tight installation areas or a special flange design to allow a precise fit into an existing system. Our products are available in many sizes and capacities that will suit many wastewater application requirements. We offer the highest standard of construction and materials to ensure you get the highest quality product possible.

Service & Warranty

Our relationship doesn't end with the sale. Expect quick and expert advice and troubleshooting about our products once they're installed. When you need service or maintenance, we'll be there on time to get your system back up and running fast.

We offer our industry-leading warranty to our municipal customers. Vogelsang products are covered by our 2-year 100% warranty that includes all parts and labor. All parts means that even wear items such as lobes, wear plates, blades, screens and mechanical seals are guaranteed for the first two years of operation.



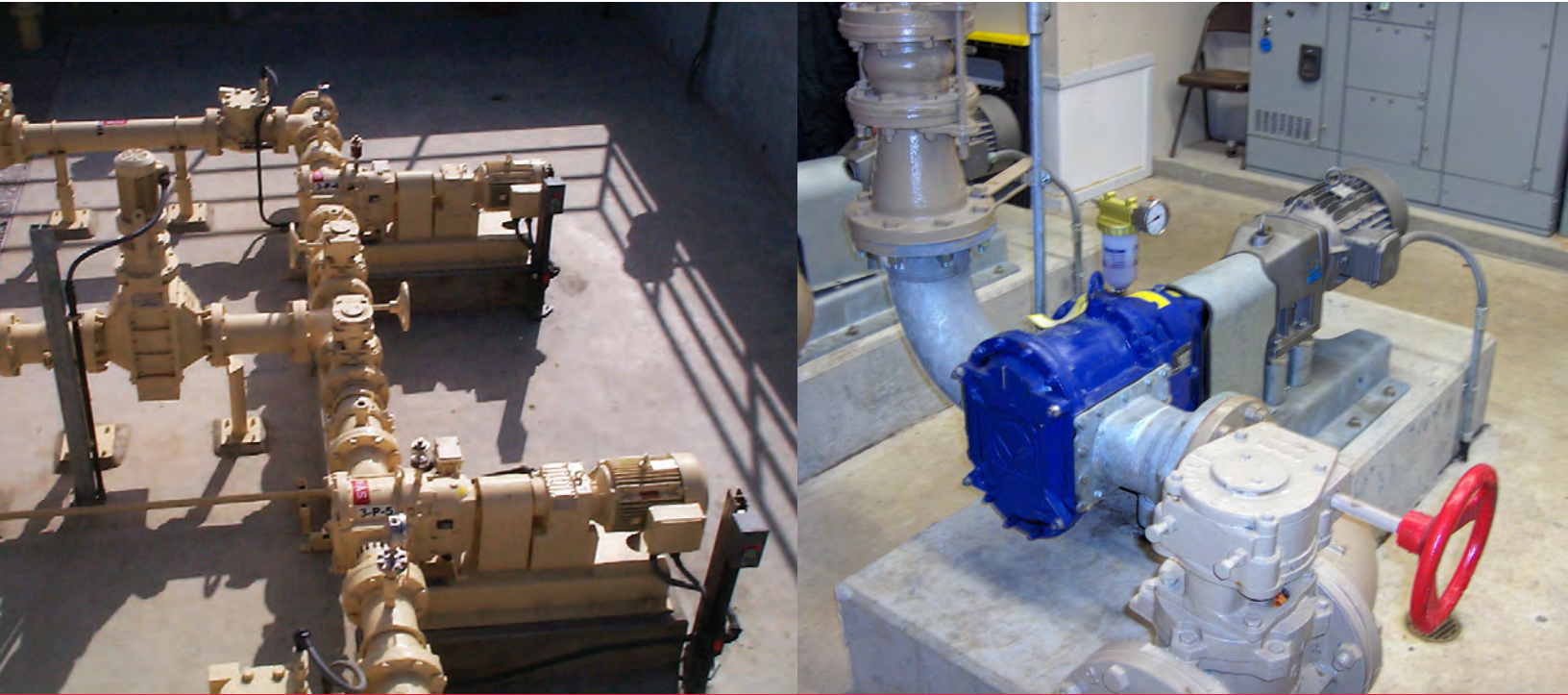
ROBUST, RESILIENT, RELIABLE!

High Solids, Heavy Grit & Abrasives

Vogelsang offers the premier positive displacement pump in the wastewater market. Due to the nature of our rotary lobe pump, our exclusive lobe design, most types of wastewater sludge can be pumped throughout your system with ease as compared to progressing cavity, centrifugal and other rotary lobe pumps. Our products are built to pump thick and abrasive sludge with no pulsation. Vogelsang pumps offer quick and easy access to the wet end for inline repair without disturbing connected piping.



HiFlo VXQ series VX100,
VX136 & VX186



The VX HiFlo Rotary Lobe Pump Product Line.

Vogelsang offers a full line of Rotary Lobe Pump models to suit various applications and operating conditions. The VX HiFlo Q series is our standard design and works well in most wastewater applications requiring a positive displacement pump. For increased flow and medium pressure, we offer the VX HiFlo QD series which features a much larger wet end and outboard bearing configuration to eliminate deflection. For high flow and high pressure applications, the Marathon QDM2 series handles pressures to over 200psi in a two stage outboard configuration.

All Vogelsang pumps can run dry without damage, self prime and run in forward or reverse. Vogelsang pumps are great for suction lift applications up to 25'. Due to our convoluted HiFlo Lobe design, the pump delivers pulsation free pumping action making it ideal for applications such as dewatering feed.



HiFlo VXQ series VX136



HiFlo VXQD series VX186



HiFlo VXQDM2 series

How the Rotary Lobe Pump Works

Two intermeshed lobes are affixed each to gear driven shaft. The shafts rotate in opposite directions. The rotating motion of the lobes creates an expanding cavity on the suction side. This allows fluid to enter and fill the suction side of the pump. The rotors carry the fluid around the housing to the discharge side where it is expelled out of the pump by the closing cavity.



Hard solids are passed through the pump within the cavities between the lobe and outer housing. The Vogelsang pump can pass most any solid that can fit in the cavity. Maximum non-compressible solid size varies by pump model up to 2.5".

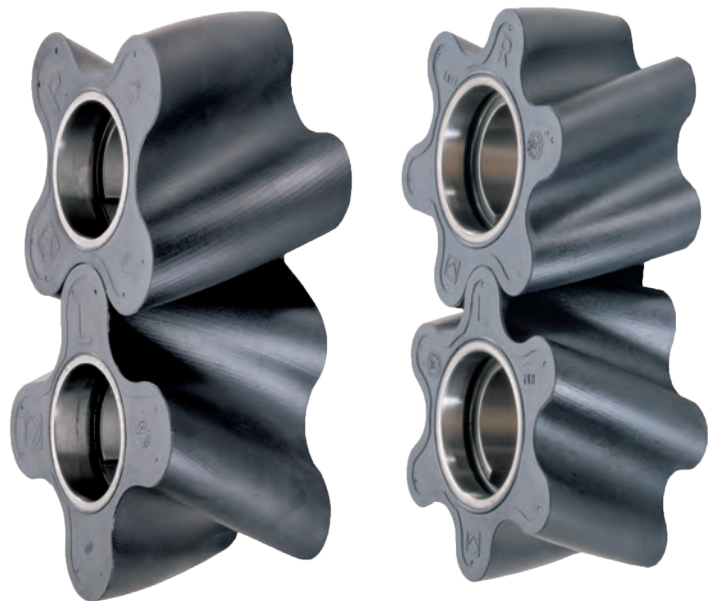
IT'S ALL ABOUT THE LOBES

Pulsation Free, High Abrasives & Low Shear

The state of the art in positive displacement pumps. The HiFlo Lobe has increased capacity compared with former lobe designs while eliminating pulsation. The convoluted design of the HiFlo Lobe provides a large cavity that's perfect for harsh and abrasive sludge. This design also makes it possible to achieve a required pressure at a slower rpm which results in less damage to lobes and minimal wear to the rest of the pump.

The gentle pumping action of the HiFlo Lobe is also friendly to shear sensitive liquids. This also applies to applications where large amounts of entrained air is present in the liquid.

Vogelsang offers six wing lobe options in the VX100 series and four wing for the VX136 & VX186 series. There are several elastomer options for maximum chemical compatibility, abrasiveness and temperature requirements.





Maintenance is performed in place without disturbing connected piping.

Wear resistant internal plates maximize pump life and reduce service downtime.

Robust Cartridge or Component Mechanical Seals provide long lasting protection of the buffer chamber and gearbox.

HiFlo rotary lobes provide pulsation-free pumping and adjustable housing segments allow for low cost wetend repairs & routine service.

Adjustable housing segments provide an accurate gap between the lobes and housing to minimize wear and maximize efficiency. Our housings come standard with a brinnell hardness of 700 with available tungsten carbide for high wear applications.

No step down shafts. We have maximized the diameter of our shafts to prevent wear lobes, seals and bearings caused by shaft deflection.

QUICK & EASY INLINE MAINTENANCE

VX Pump Series Performance Specifications:

Model		Capacity		Displacement		Max. Solids		Flange Size		Max Pressure				Max. Speed	
		gpm	m3/h	gal/100rev	l/100rev	in	mm	in	mm	Q: psi	bar	QD: psi	bar	rpm	1/min
VX100	45	13-60	3-13	7.7	29	.75	20	2.5	65	145	10				1000
	64	22-85	5-19	11.1	42	.75	20	3.0	80	131	9				1000
	90	26-120	6-26	15.6	59	.75	20	4.0	100	102	7				1000
	128	40-170	9-38	22.2	84	.75	20	4.0	100	58	4				1000
VX136	70	45-200	10-45	33.5	127	1.50	40	4.0	100	145	10	174	12		800
	105	65-310	15-70	50.0	190	1.50	40	4.0	125	145	10	174	12		800
	140	90-400	20-90	67.0	253	1.50	40	6.0	125	116	8	174	12		800
	210	130-610	30-140	100.0	380	1.50	40	6.0	150	73	5	145	10		800
	280	180-800	40-180	134.0	506	1.50	40	6.0	150			116	8		800
	420	260-1220	60-280	200.0	759	1.50	40	6.0	150			87	6		800
	140M2	45-200	10-45	33.5	127	1.50	40	6.0	125			232	16		650
	210M2	65-310	15-70	50.0	190	1.50	40	6.0	150			232	16		650
	280M2	90-400	20-90	67.0	253	1.50	40	6.0	150			203	14		650
	420M2	130-610	30-140	100.0	380	1.50	40	6.0	150			174	12		650
VX186	92	90-440	20-100	94.0	356	2.50	61	6.0	125	145	10				600
	130	130-640	30-145	133.0	503	2.50	61	6.0	150	145	10	174	12		600
	184	180-880	40-200	188.0	712	2.50	61	6.0	150	116	8	174	12		600
	260	260-1280	60-290	266.0	1006	2.50	61	8.0	200	73	5	145	10		600
	368	360-1760	80-400	376.0	1424	2.50	61	10.0	250	44	3	116	8		600
	390	390-1920	90-435	399.0	1509	2.50	61	10.0	250	44	3	102	7		600
	520	520-2560	120-580	532.0	2012	2.50	61	10.0	250			87	6		600
	736	720-3520	160-800	752.0	2848	2.50	61	14.0	350			44	3		600
	184M2	90-440	20-100	94.0	356	2.50	61	6.0	150			232	16		600
	260M2	130-640	30-145	133.0	503	2.50	61	8.0	250			232	16		600
	368M2	180-880	40-200	188.0	712	2.50	61	10.0	250			203	14		600
	520M2	260-1280	60-290	266.0	1006	2.50	61	10.0	250			174	12		600



APPLICATIONS

Dewatering Feed Pumps

Our pumps have been widely chosen for to feed dewatering equipment such as Belt Press, Centrifuge and Gravity Belt Thickeners. This is largely due to the pumps ability to deliver sludge to the equipment evenly with no pulsation. An even flow of sludge to the dewatering equipment helps the equipment run as efficiently as possible and with less polymer.

Additionally, it's compact and easy to fit or retrofit onto the same skid as the detwatering unit itself.

Primary & Secondary Sludge

Primary & Secondary Sludge are typically where we find the heaviest concentration of grit and floatable non-organic debris in the wastewater plant. The solids content is usually low; typically 1%-3% solids.

In this application, harder materials of construction are often chosen for the wet end along with abrasive-friendly elastomers for the lobes.

Typical operation of a lobe pump in Primary Sludge is best if the pump pulls a constant low flow of sludge versus intermittent off-on operation.

Digested & Thickened Sludge

Digested & Thickened Sludge applications are very common in wastewater plants that have use either anaerobic or aerobic digestion. These applications are normally between 3-8% solids and mostly very homogeneous in nature. In these applications the operating pump can see light to medium abrasive so the right material of lobes are very critical.

Digested sludge applications require low pulsation in their flow, as they typically feed to dewatering equipment. The lower the pulsation, the more accurate polymer dosage can be applied. Additionally, the pumps can encounter solids like hair and rags that may be difficult to pass by pumps not designed for solids handling.



WAS & RAS

Waste Activated Sludge requires the ability to pump varying viscosity sludge. Due to our HiFlo lobe design, we give you the most efficient positive displacement pump on the market.

WAS & RAS sludge is typically mild as the majority of the grit has settled out. Some grit will remain but it is usually in lower concentration.

The main challenge in pumping WAS or RAS is that it often contains high amounts of entrained air which can cause cavitation if the wrong flanges are installed. We overcome this using our gooseneck flanges, that keeps the pump primed and able to move the sludge through the pump without air locking. Standard materials of construction are sufficient for most applications including NBR lobes and standard wet end with either cast iron or Astempered Ductile Iron (ADI).

Scum & Septage

Scum is usually saturated with air and loaded with inorganics (floatables). Additionally, pumping high concentrations of floatables without sufficient water to move the solids is difficult due to the lack of conveyance. Even though flows are typically pretty low, we often prefer to oversize the pump and run it slower to allow the pump to pass larger solids.

Septage pumping can sometimes be the most difficult application in a wastewater plant, and normally ranges from .5-1% solids. Due to the way it's collected it can contain grease, hard solids, hair, rags, and other solid wastes. The pumps need to pass the solids without damage. Vogelsang pumps are able to pass large solids due to the large cavities in the lobe design.

DAFT

DAFT applications are difficult not only because of the entrained air, but also the thickness of the sludge. Vogelsang pumps are designed for pumping viscous liquids containing heavy solids. A slower operating pump coupled with a wide range of available elastomers is critical. These applications require low speed in order to keep the pump from excess cavitation due to air pockets building in the cavities of the pump. Additionally, you can encounter floating solids, hair and rags that can build-up over time.



SOLIDS REDUCTION, SOLIDS SEPARATION, SLUDGE CONDITIONING

High Performance Grinding, Easy Inline Maintenance

The RotaCut inline grinder effectively reduces solids to specific size requirements, and reduces the costs associated with the operation of downstream equipment. Objects and debris suspended in liquid such as plastic fragments, rubber, hair, rags, applicators, plastic pens, string, wood, bones, etc. are drawn through the cutting screen and cut by the self-sharpening rotary blades into an acceptable size for the downstream equipment to pass.

Standard features include Auto Reverse, Auto Cut Control, self sharpening blades, and reversible cutter screens. RotaCut is 100% rebuildable inline, which eliminates the need to send out cutter cartridges for reconditioning.

Placed on the suction or discharge side of any manufacturer's pump, the RotaCut will eliminate ragging, reduce solids and protect downstream equipment. Protect pumps and dewatering equipment from clogging, prevent damage to belt press and plate and frame press applications, and more efficiently balance your centrifuge feed.

**RotaCut RC 3000, RC 5000
& RC 10000 Series**





NUMEROUS SIZE & CONFIGURATION OPTIONS

The RotaCut Product Line.

Vogelsang offers a full line of RotaCut models to suit various applications and operating conditions. The RotaCut RC series is our standard design and works well in most wastewater applications suitable for an inline grinder. For increased solids reduction we offer the Pro, Pro Compact & Cyclone series which features a larger collection basin and horizontal head orientation. For more extreme solids handling, the RCX series is available and offers higher pressure, lower headloss and maximum solids reduction at even the highest flows.



RotaCut RCX48 & RCX58



RotaCut Pro Compact



RotaCut Cyclone



RotaCut RCQ

How the RotaCut Works

When placed on the suction side of a pump, the RotaCut effectively reduces floating solids in the liquid stream. Heavy solids are captured in the collection basin and eliminated entirely from the liquid. The combination of solids reduction and separation provides true protection for downstream components.



AutoReverse is how the RotaCut handles large objects by reversing the rotation of the blades until the object is cleared, reduced and passed through the screen. AutoReverse engages at preset intervals which keeps the blades wearing evenly. The trailing edge of the blade is sharpened as a natural effect of the cutting process. When the rotation is reversed a fresh edge enhances the cutting quality.



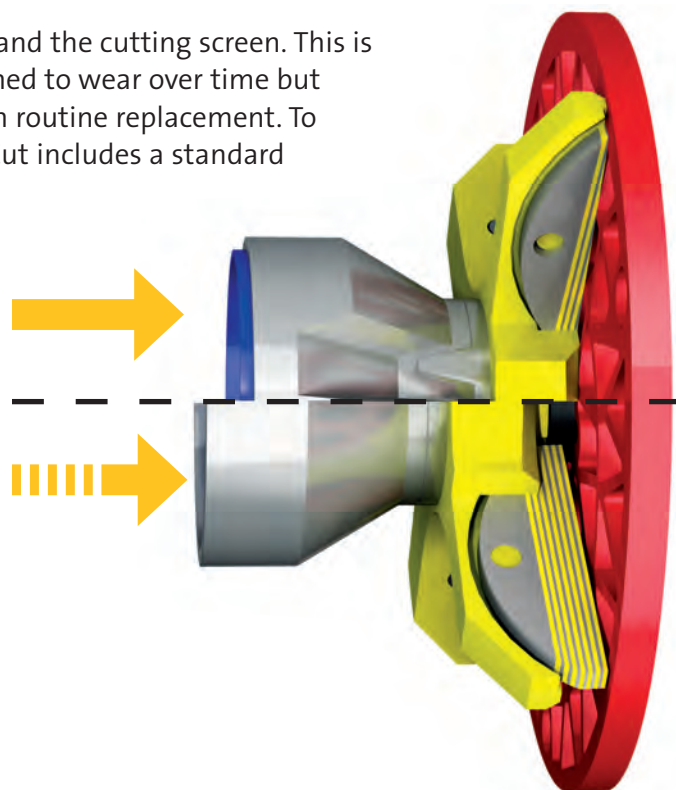
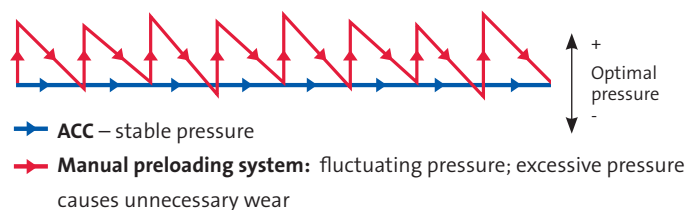
INCREDIBLE SOLIDS HANDLING & MAXIMUM LIFE CYCLE

Quality Performance & Control

The RotaCut requires direct contact between the blades and the cutting screen. This is how it achieves the scissor-like cut. The blades are designed to wear over time but must wear evenly to achieve maximum lifecycle between routine replacement. To ensure that the blades last as long as possible, the RotaCut includes a standard feature known as Auto Cut Control or ACC.

ACC ensures high cutting performance at all times by automatically adjusting the blades as normal wear progresses. ACC completely eliminates manual maintenance of the cutting head tension. The entire process is controlled externally which minimizes the need to open the unit.

The diagram below demonstrates the difference between manual adjustment versus real time automatic pressure optimization.





Easy Inline Maintenance

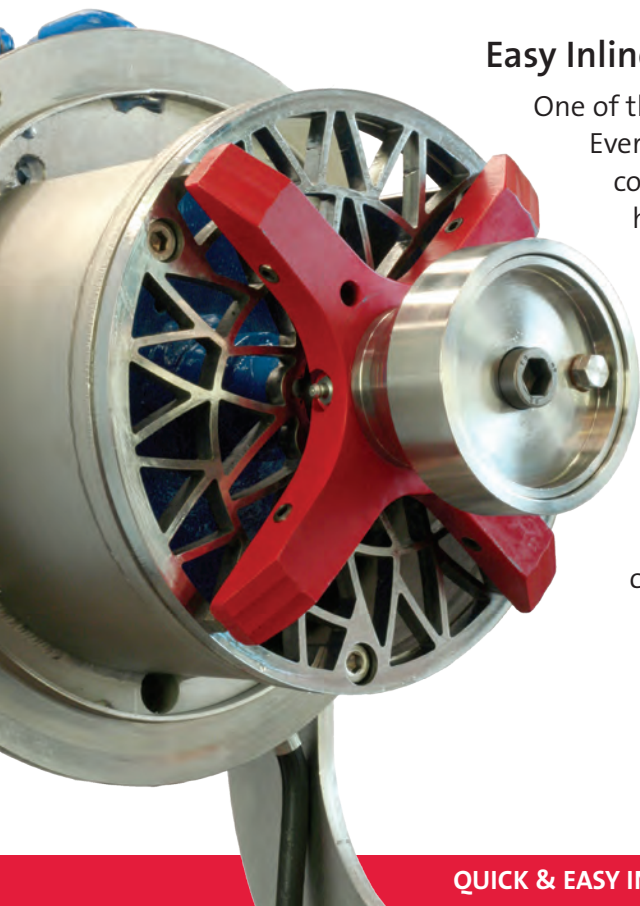
One of the best features of the RotaCut is how easy it is to maintain.

Everything can be done inline in minutes without removing any connected piping. The RC series are all designed with a hinged cutting head that can be accessed by disengaging one or more hand latches.

The head is disassembled by removing the allen bolt that holds the entire assembly together. At this point routine service such as blade or screen changes can be performed quickly.

The RCX model features a quick release door allowing access to the cutting head.

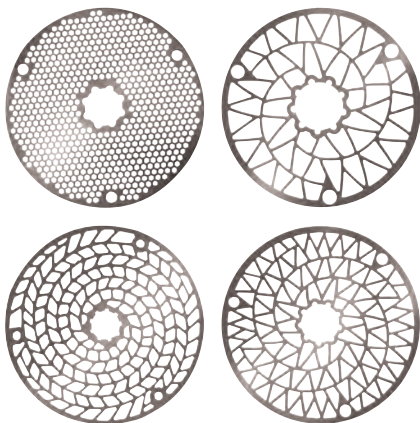
Typical routine service such as changing blades or flipping the reversible cutting screen takes only a fraction of the time required to service a typical twin shaft grinder. In addition there are no cartridge style parts that require factory refurbishment.



QUICK & EASY INLINE MAINTENANCE

RotaCut Grinder Performance Specifications:

Model		Capacity gpm	m3/h	Motor Power hp kW		Cut Solids in mm		Flange Size in mm		Max Pressure psi bar		Motor Gear Hyd		Speed Options rpm 1/min
RCQ 20	Inline	396	90	1.5-3.0	1.1-2.2	.39-0.78	9-20	4	100	30	2	Yes	No	87-320
RC 3000	Inline	792	180	2.0-5.0	1.5-4.0	.31-1.10	8-28	6	150	30	2	Yes	Yes	76-326
RC 3000	Cyclone	792	180	2.0-5.0	1.5-4.0	.31-1.10	8-28	6	150	6	.5	Yes	Yes	76-326
RC 5000	Inline	1320	300	2.0-10.0	1.5-7.5	.15-1.18	4-30	6	150	30	2	Yes	Yes	73-330
RC 5000	Cyclone	1320	300	2.0-10.0	1.5-7.5	.15-1.18	4-30	6	150	6	.5	Yes	Yes	73-330
RC 5000	Compact	1320	300	2.0-10.0	1.5-7.5	.15-1.18	4-30	6	150	44	3	Yes	Yes	73-330
RC 10000	Inline	2640	600	3.0-10.0	2.2-7.5	.15-1.50	4-38	8	200	30	2	Yes	Yes	66-319
RC 10000	Cyclone	2640	600	3.0-10.0	2.2-7.5	.15-1.50	4-38	8	200	6	.5	Yes	Yes	66-319
RC 10000	Compact	2640	600	3.0-10.0	2.2-7.5	.15-1.50	4-38	8	200	44	3	Yes	Yes	66-319
RC 10000	Compact XL	2640	600	3.0-10.0	2.2-7.5	.15-1.50	4-38	8	200	44	3	Yes	Yes	66-319
RCX 48	Inline	2640	600	7.5-15.0	5.5-11.0	.15-1.50	4-38	8	200	87	6	Yes	No	114-311
RCX 58	Inline	3300	750	10.0-20.0	7.5-15.0	.31-1.33	8-34	10	254	87	6	Yes	Yes	94-276



Specify a required cut size using one of several pattern cutting screens.

Screens come several patterns that will produce a designated size solid. The rotational speed of the cutting head also influences the solid size. The examples shown will produce a different solid size and are easily interchangeable should operating conditions change. Screens are available in several material options for high wear applications. All RotaCut screens are reversible to allow for a fresh cutting surface without buying a new spare part.



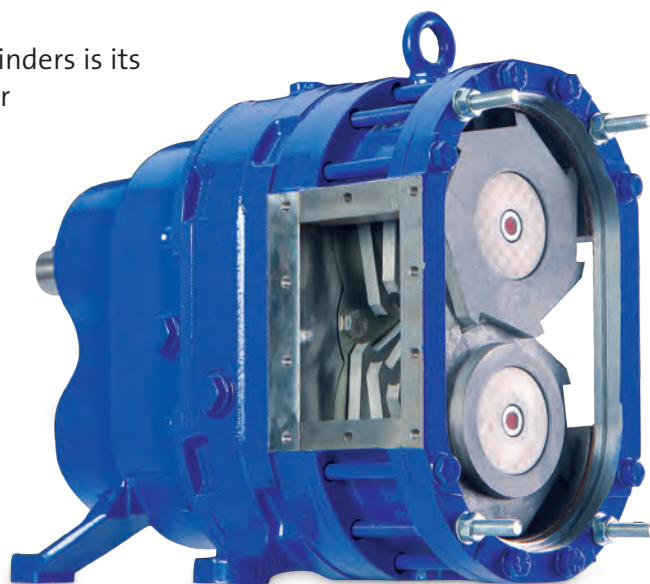
HEAVY WET & DRY SOLIDS REDUCTION

Heavy Solids Grinding

The X-Ripper twin shaft grinder effectively reduces large solids to manageable size for further solids reduction or for downstream pumps and equipment to process without clogging or damage.

What sets the X-Ripper apart from other twin shaft grinders is its unique cutting elements. Traditional twin shaft grinder cutters are stacked up along the shaft using smaller individual blades and components. The main disadvantages of the traditional design is the complexity of maintenance and high cost of repair. Periodic factory service is required to keep a traditional twin shaft grinder operating efficiently which affects maintenance costs and increases downtime.

The X-Ripper features solid ripper rotors that are precision machined out of high quality hardened alloy. They are not built up out of several smaller pieces like typical twin-shaft grinders. Our cutters provide long lasting grinding performance and are easy to replace without removing any connected piping or sending parts back to the factory.



X-Ripper XRSQ



WET OR DRY GRINDING CONFIGURATIONS

The X-Ripper Product Line.

Vogelsang offers two main configurations, the XRSQ and XRSQD, designed to operate in an inline fluid stream condition. There is also one configuration, the XRLQD, designed to operate in a wet or dry feed condition. The XRS comes in several housing sizes and wet-end options to suit numerous flow rates and solids handling conditions. The XRL is designed to work with a hopper feed and an adjustable frame. This allows it to be worked into an existing system with minimal retrofitting.



X-Ripper XRLQD

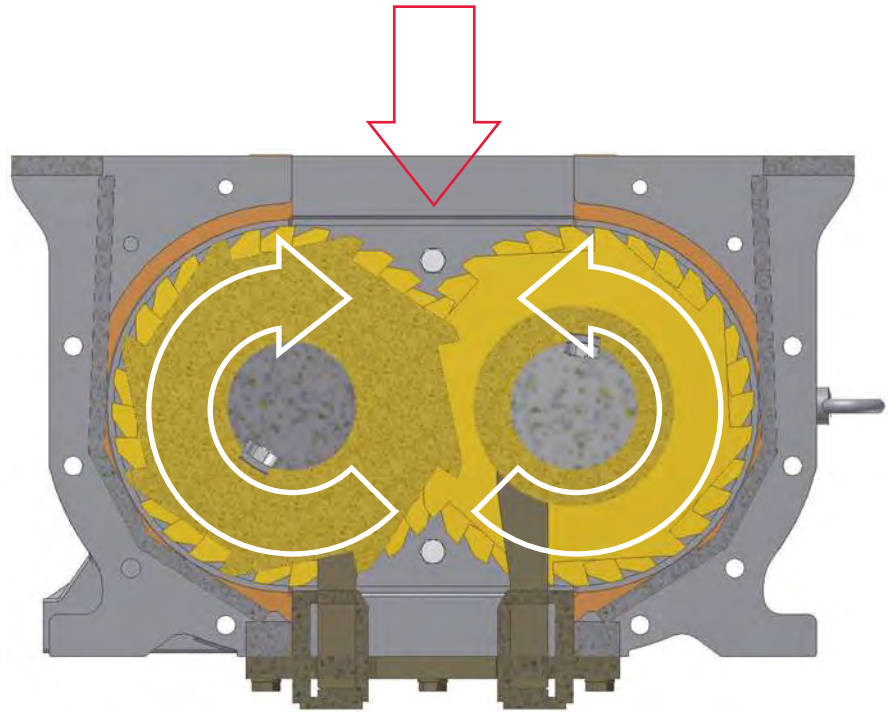


X-Ripper XRSQD

How the X-Ripper Works

The X-Ripper grinds and reduces solids by means of two rotating ripper rotors. Each rotates in the opposite direction towards the center of the device. This draws solids between the ripper rotors which effectively grinds the solids as they pass through.

To enhance the grinding effect, one of the cutting elements is rotating faster than the other. The difference in rotational speed enhances the overall ripping effect of the device.



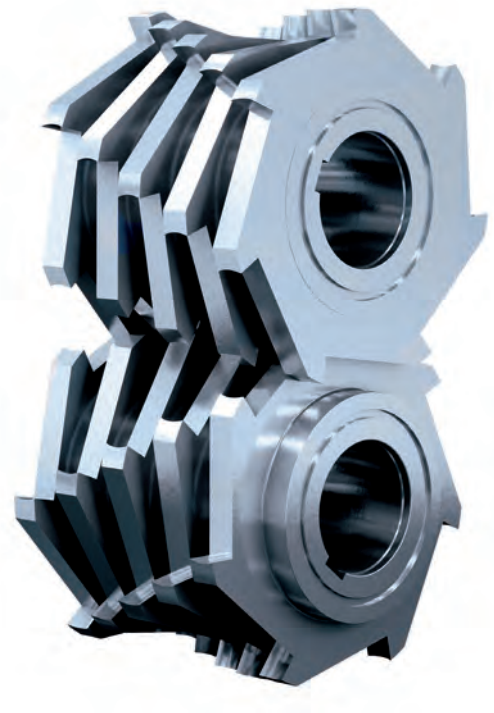
INCREDIBLE SOLIDS HANDLING & MAXIMUM LIFE CYCLE

Quality Performance & Control

The X-Ripper's cutting performance can be controlled in two ways. The first method is by the width of the blades. The XRS 100, 136 & XRS 186 allow for optional blade widths which generate different cuts. Finer blade width results in a more reduced solid.

The other way to influence cut size is by rotation. Higher RPM also produces a finer cut.

The cutters are precision machined from as a single piece. They are made from specially processed steel that is formulated to be ductile inside with an incredibly hard surface. This creates a cutting element that is highly resistant to impact while retaining sharp edges.





Easy Inline Maintenance

By comparison to a traditional twin shaft grinder, the X-Ripper is easy to maintain. Everything can be done inline in without removing any connected piping. The front cover is removed for easy access to the wet end or cutting area. The X-Ripper's ripper rotors are both removed at the same time and come off in solids sections versus individual pieces.

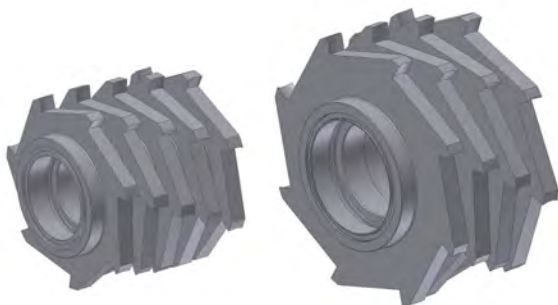
Typical routine service such as changing rotors takes only a fraction of the time required to service a typical twin shaft grinder. In addition there are no cartridge style parts that require factory refurbishment.



QUICK & EASY INLINE MAINTENANCE

X-Ripper Grinder Performance Specifications:

Model	Capacity		Operating Torque		Cut Solids		Flange Size		Max Pressure		Solids		Speed rpm 1/min
	gpm	m3/h	in. lbs.	Nm	in	mm	in	mm	psi	bar	Wet	Dry	
XRS100-64Q	176	40	2655	300	.32	8	3	80	131	9	Yes	No	800
XRS100-90Q	242	55	2655	300	.32	8	4	100	131	9	Yes	No	800
XRS136-140Q	484	110	10620	1200	.47	12	6	150	174	12	Yes	No	650
XRS136-140QD	484	110	10620	1200	.47	12	6	150	174	12	Yes	No	650
XRS186-130Q	748	170	21240	2400	.59	15	6	150	174	12	Yes	No	500
XRS186-130QD	748	170	21240	2400	.59	15	6	150	174	12	Yes	No	500
XRS186-260QD	1584	360	21240	2400	.59	15	8	200	145	10	Yes	No	500
XRS186-520QD	2994	680	21240	2400	.59	15	10	250	87	6	Yes	No	500
XRL186-260QD	88	20	21240	2400	.59	15	n/a	n/a	29	2	Yes	Yes	500
XRS186-520QD	176	40	21240	2400	.59	15	n/a	n/a	29	2	Yes	Yes	500



Specify a required cut size using one of several cutting elements.

X-Ripper models 100, 136 & 186 have optional blade widths. The XRS 136 features optional cutting elements in .38" or .54" widths. The XRS 186 or XRL 186 features optional cutting elements in .31", .41" or .63". A width is selected based on the application, solid type and operating conditions.



APPLICATIONS

Our grinders have been widely chosen for handling solids and conditioning sludge in a variety of applications throughout a wastewater treatment plant.

RotaCuts are generally placed in front of pumps and process equipment that are vulnerable to damage by liquids containing hard solids, fragments and debris commonly found in wastewater sludge streams.

In many cases, a RotaCut can replace an inline twin shaft grinder in common wastewater applications.

Primary Sludge

Primary Sludge is a tough application for most any grinder. The typically heavy concentration of grit and floatable non-organic debris creates the need for a grinder that can perform and last in these operating conditions.

In this application, The RCX Series is recommended due to its high flow range, low head loss and overall robust construction. The RCX has a very large cutting area for its footprint and can be retrofitted into an existing system in a variety of ways.

Sludge Transfer

Moving sludge from one process to the next creates an opportunity for damaging debris to find its way into process equipment where it doesn't belong.

Adding a RotaCut in key locations throughout the overall system, eliminates solids from the stream before they can cause harm to potentially sensitive components.

A RotaCut model will be recommended based on the flow range, fluid type and operating conditions. Vogelsang offers the largest range of inline rotary style single shaft grinders in the wastewater market and will recommend the right model for your specific requirements.



Dewatering Feed

Adding a RotaCut in front of a Belt Press, Centrifuge, Gravity Belt Thickener or most any other dewatering device protects it from harmful solids, excess grit and floatables.

Additionally, the rotating action of the cutting head conditions the sludge into a homogenous suspension that flows evenly into the device. Combined with the pulsation free flow provided by our pumps, the dewatering equipment is fed fully conditioned sludge free of potentially damaging elements.

Digester Feed

Much like feeding dewatering equipment, the RotaCut is also well suited to prevent heavy objects from entering the digester. In the process, the sludge is also conditioned to a homogenous suspension ready for digestion.

The RotaCut offers a distinct advantage over twin shaft grinders in feeding applications. The scissor-like cutting action reduces rags, hair and other fibrous objects into fine particles. Twin shaft grinders tend to rip these solids into longer shredded pieces. The presence of larger solids in the liquid interferes with the process and can cause blockages.

Digester Cleaning

Digester cleaning is a particularly harsh application. Depending on the solids handling performed on the inbound sludge stream, evacuating heavy residual sludge can be a high-wear application for most inline grinders.

As with Primary Sludge, we often recommend our RCX series RotaCut due to its powerful design and robust construction. The RCX powers through thick sludge containing high amounts of heavy solids, grit and other debris that is known to settle in the bottom of digesters used for municipal, industrial or agricultural wastewater.



INCREASED GAS PRODUCTION, REDUCED SOLIDS DISPOSAL

High Voltage Sludge Lysing

The BioCrack is a state-of-the-art high voltage sludge lysing system that prepares the liquid for maximized bio-gas yield and reduces solids content in sludge. The overall system uses mechanical maceration combined with an electrokinetic process that produces a liquid with the highest potential for making biogas and reducing solids compared to conventional slurry handling and reduction methods.

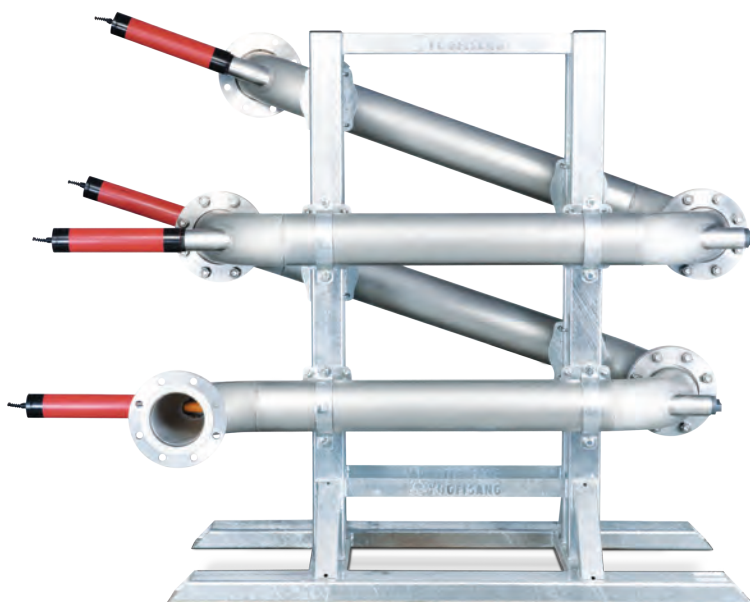
The BioCrack provides the bacteria easier access to the nutrients in the bio-suspension. A high voltage field is generated by the electrokinetic disintegration process within the module. Exposure to the field degrades and breaks the cell walls of the organic matter. As a result, the nutrients within the cells are released to the fermenting bacteria. The result: increased gas yield, better utilization of the substrates and less residual solids to dispose of.





The BioCrack Product Line.

The BioCrack is a highly configurable device that can be worked into countless configurations to maximize space savings and minimize retrofitting. The BioCrack can be installed on a frame as shown below or mounted to an existing structure.



Typical Results.

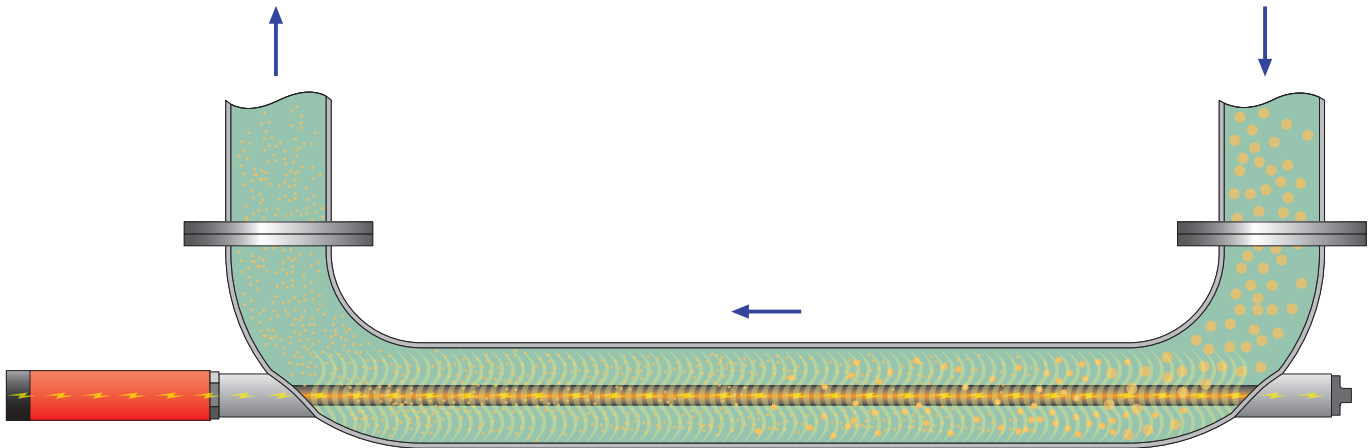
Adding a BioCrack affects each plant differently depending on the properties of the sludge or slurry.

Average Results include:

- Increased Bio-gas yields up to 18%.
- Increased energy production.
- Enhanced digestion with less material consumption.
- Reduced process energy consumed by mixing.
- Shorter and more stable digestion cycles.
- Reduced dry solids content with better dewatering up to 21%.
- Reduced polymer consumption up to 18%.

How the BioCrack Works

The sludge flows through a pipe system with an internal electrical high voltage field. The electric force degrades the structure of the cells causing them to deform and finally rupture. As a result, the raw material inside the cell is exposed to the bacteria. The enhanced exposure produces more biogas. The process also enhances dewatering of the digested sludge as an additional benefit of the process.

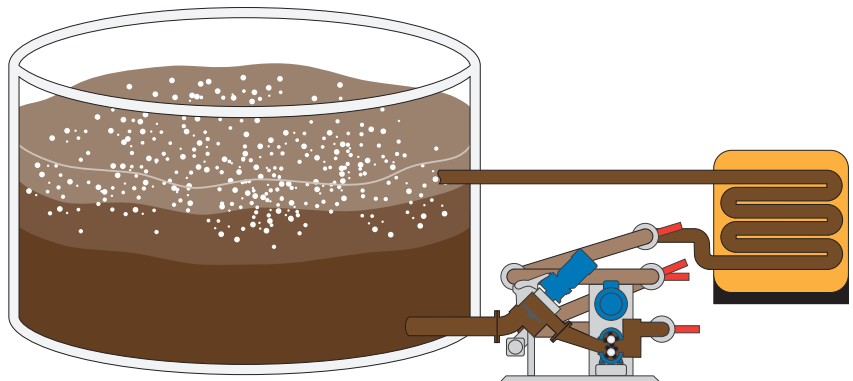


INCREASED GAS, REDUCED RESIDUAL SOLIDS

Where to add a BioCrack?

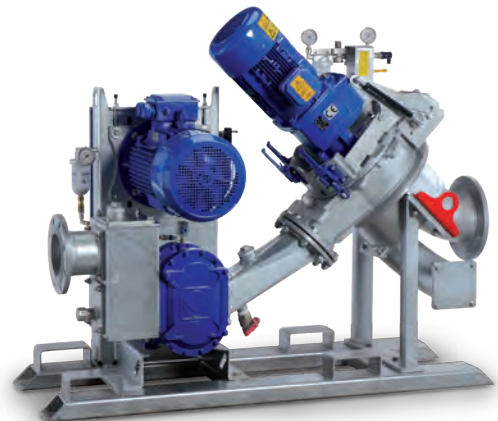
The BioCrack is primarily designed to enhance the digestion process. It is typically placed between the digester and the heat exchanger or on a thickened sludge feed line.

Sludge is cycled through the BioCrack at predetermined intervals depending the characteristics of the sludge as well as the digester and related components.



Feeding the BioCrack

The BioCrack must be fed the sludge by means of a pump. The sludge must also be mechanically conditioned to remove or separate hard solids while also homogenizing the liquid. For best results, we require a Vogelsang VX Rotary Lobe pump and a RotaCut Inline Grinder to feed sludge into the BioCrack System. This ensures the system is fed at the optimum flow rate and damaging solids are reduced or removed from the liquid.



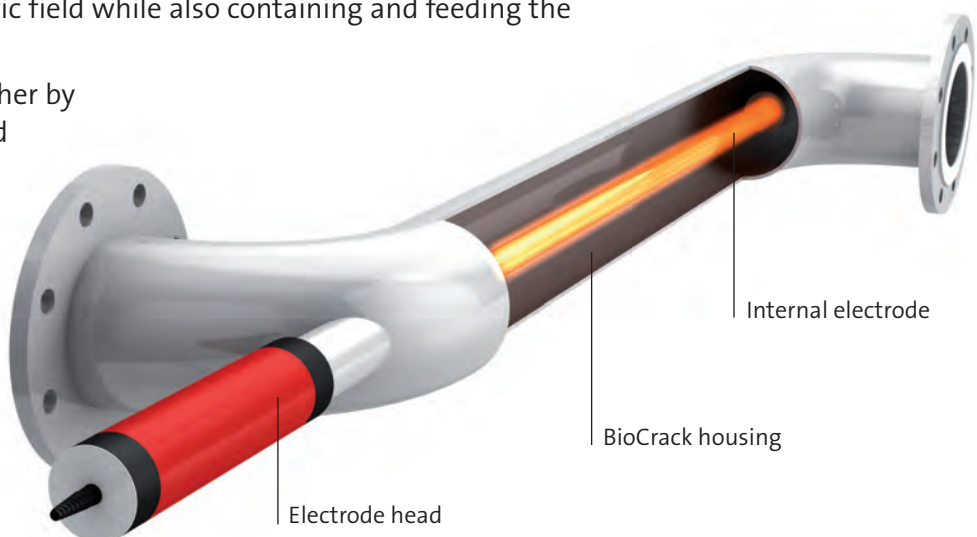


Components of a BioCrack Module

The BioCrack is made up of three major components. The Electrode head is where the Voltage is increased. The Internal electrode disperses the electric field within the tube housing. The tube housing contains the electric field while also containing and feeding the liquid throughout the processes.

The electrodes are controlled either by individual panels or can be wired together into a common control panel. The panel can also be configured to control the RotaCut and Pump as well.

The BioCrack requires a feed pump and a RotaCut inline grinder. Solids must be reduced in order for the process to work effectively.



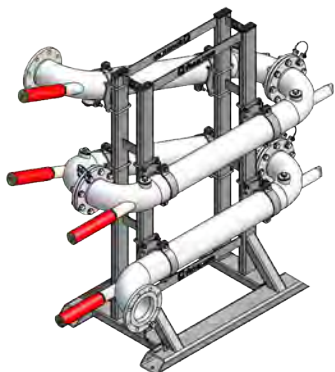
BioCrack Performance Specifications:

Model	Dimensions		Power Required		Max Solids	Flange Size		Max Pressure		Material	Capacity*	
	l/w in	l/w mm	Watts	Voltage		in	mm	psi	bar		gpm	m3/h
U-Style Pipe	81x13	2053x326	35	110v, 60hz	8	6	150	73	5	316	352	80
S-Style Pipe	81x20	2053x492	35	110v, 60hz	8	6	150	73	5	316	352	80
90° Left Flange Pipe	81x20	2053x326	35	110v, 60hz	8	6	150	73	5	316	352	80
270° Right Flange Pipe	81x20	2053x326	35	110v, 60hz	8	6	150	73	5	316	352	80

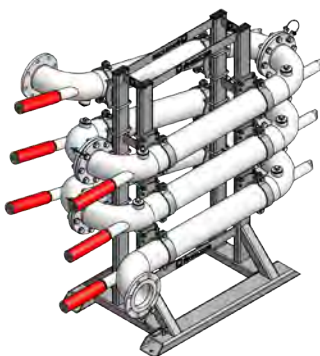
*Max Flow rate varies based on the solids percentage.

BioCrack Configurations

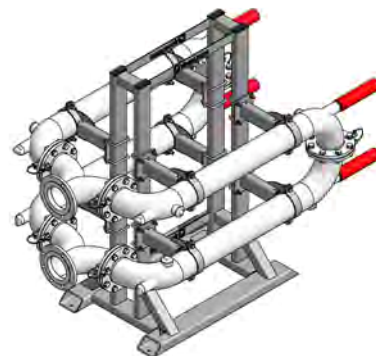
The BioCrack can be set up in a variety of ways. Using our assembly frame, up to six pipes can be mounted together. The number of pipes is determined by the characteristics of the sludge and digestion process. Each plant is different thus, many options are available to achieve the best results.



BioCrack 4 Pipe Assembly



BioCrack 6 Pipe Assembly



BioCrack 4 T-Pipe Assembly



VOGELSANG
ENGINEERED TO WORK

Our company

Innovation and progress have been hallmarks of Vogelsang for over 80 years and have made us a leading designer and manufacturer of pumping, solids handling and process products. Time and time again we have achieved significant milestones of innovation and product development.

Today, we manufacture some of the most innovative and reliable products for municipalities, industry and agriculture.

Our products are proudly made and assembled in Ravenna, Ohio, USA.

Our product range

We offer solutions for the following areas:

- Industry & Processing
- Wastewater treatment
- Biogas
- Railway wastewater disposal
- Agriculture

We offer a broad range of products:

- Rotary lobe pumps
- Grinding technology
- Distributors
- Spreading technology
- Supply and disposal systems
- Complete solutions

We also offer customized solutions for your specialized applications.

How to reach us

Vogelsang is present worldwide. Visit us online for more information about our company and wide range of services:

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