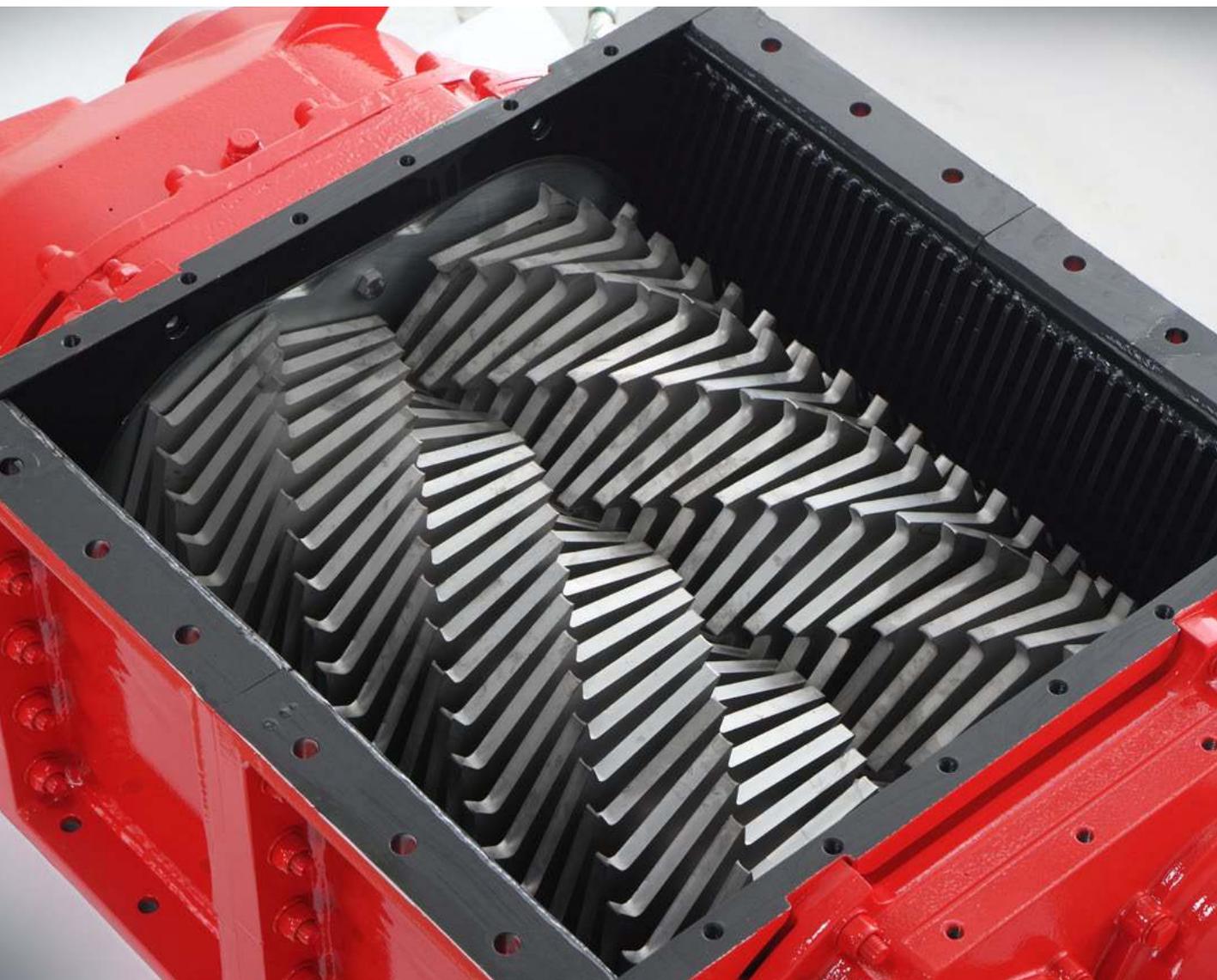


XRIPPER®

Twin-Shaft Grinder Buyer's Guide



VOGELSANG
ENGINEERED TO WORK



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ENGINEERED TO BE A BETTER GRINDER

Vogelsang designed the XRipper® grinder to specifically overcome the performance and maintenance issues associated with typical twin-shaft grinders.



XRIPPER®

A Full Line of Twin-Shaft Grinders

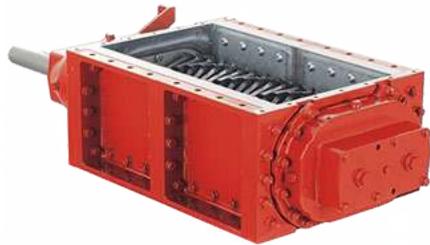
Models for:

In-Pipe, Pipeline Applications
Sludge Lines
Septage Receiving
Digester Feed
Dewatering Feed

In-Channel, Wall Mounted Applications
Headworks
Channel Mounts
Lift Stations, Wet Wells

Hopper Feed Applications
Screenings Handling

PROVEN ROBUST DESIGN



Hardened Carbon Steel Housing

XRipper utilizes proven technology that Vogelsang has perfected in the decades of engineering equipment for the toughest municipal and industrial applications.

*Available in other materials as needed



Superior Gear Box and Drive Shaft Technology

The gear cases are cast iron, the exact same parts that we use for our VX-Series pumps -- a proven workhorse, no corners cut.



Commonly Asked Question:

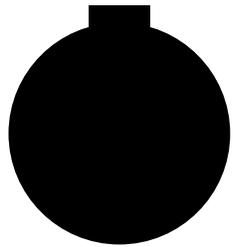
Q. How can you price these units so competitively? Will the units hold-up?

A. Pricing-wise, Because we borrowed proven designs from our pumps, including: housings, gear boxes, seals, and bearings to design our twin-shaft grinders, we developed a superior grinder within our existing R&D and production framework. Meaning, we don't have to pass along extensive product development costs to our customers.

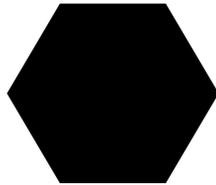
B. Construction-wise, XRipper grinders are a heavy-duty design with decades of proven technology built-in without having to cut corners on materials or sturdy construction. In numerous trials against competitor units, XRipper has outlasted comparable units.

PROVEN ROBUST DESIGN

Shaft Comparison



Vogelsang*



Others

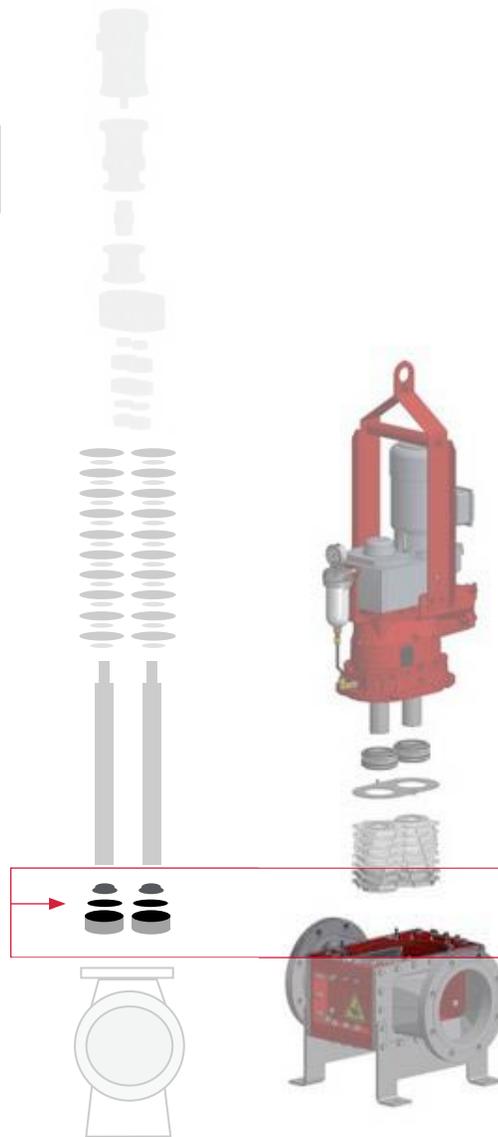
Vogelsang Uses Larger Keyed Shafts

Other manufactures use smaller diameter hex-shafts which can't deliver torque like Vogelsang's larger keyed shafts can.

Vogelsang's larger shafts also reduce shaft deflection. Shaft deflection puts strain on the cutting system, seals and bearings. This increases wear and leads to shorter service intervals.

With Vogelsang's design, you know you're getting high torque and a heavy duty, long-lasting unit.

*Illustrative Representation



Typical Grinder
with Individual Blades
and Spacers

*(Illustrative Representation
of Exploded View)

Vogelsang XRipper
with Monolithic
Ripper Rotors

**40-50%
Fewer Wet-End Parts**



Seals

Vogelsang XRipper uses the same cartridge mechanical seals that we've used in our rotary lobe pumps for over a decade. These are highly resistant to debris and far easier to install than component style seals.

No Lower Bearing on Pipeline Units

Due to the robust design -- the combination of the larger shafts and sturdy one-piece ripper rotors -- our in-pipe or pipeline grinder don't require a lower bearing.

This means you don't have a wear part sitting in the bottom of the unit where grit and waste material is likely to breakdown wear parts.

PERFORMANCE DRIVEN

Bringing Simple & Robust Design to the Twin-Shaft Grinder

- High Torque Design: Larger diameter, one-piece cutters (Ripper Rotors), combined with keyed shafts and optimal rotational speed, provides maximum torque and shredding characteristics.
- Monolithic Ripper Rotors can't wear and loosen like grinders with individual blades and spacers. No "blade chatter" or stack tightening needed.
- Vogelsang Ripper Rotors are made from a proprietary steel that's hardened at the tips to ensure a longer life.
- Vogelsang's minimal shaft deflection places less strain on seals and bearings.

Vogelsang One-Piece Ripper Rotors

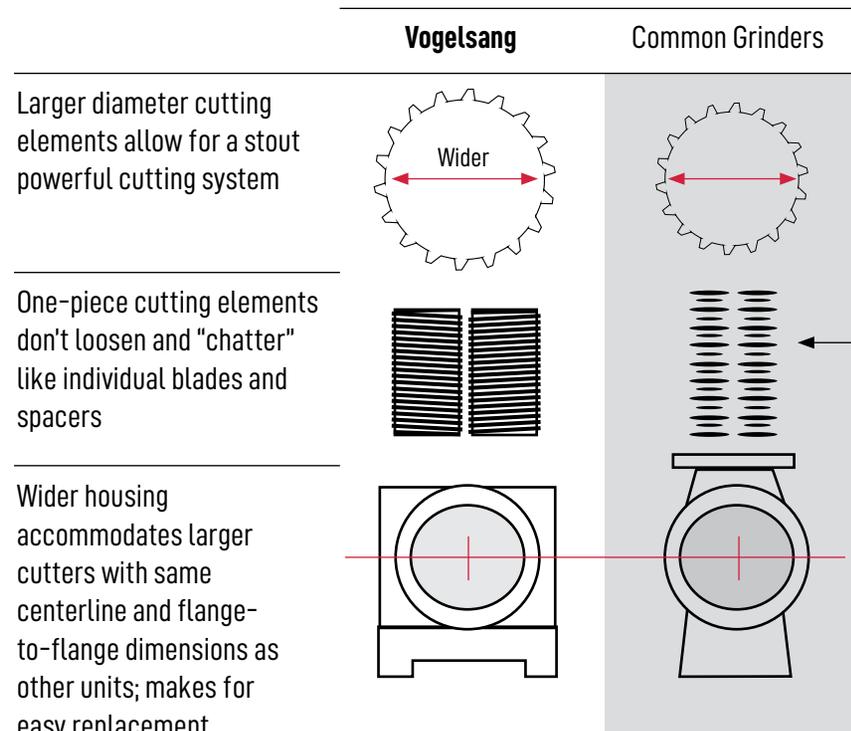


Larger Diameter,
Monolithic Cutting
Elements Deliver
Consistent Solids
Reduction

Vogelsang Goes Wider

To accommodate higher flow rates, manufacturers have typically made grinder units taller. While this might be easier for them on the design and production side, it doesn't inherently benefit the end-user.

Vogelsang, instead, engineered the cutting area of XRipper models to be wider than most comparable models from other manufactures, while not changing the overall space requirements. This allows us to handle increased flow requirements, while also providing larger diameter, one-piece Ripper Rotors. Users often find this design leads to longer lasting, consistent solids reduction.



Individual Blades & Spacers

*(Illustrative Representation of Exploded Views)

ADVANCED CUTTING & GRINDING SYSTEM

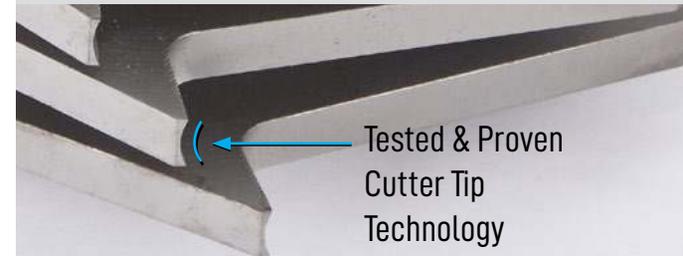


Forget "blades," we designed **Monolithic Ripper Rotors**

- Our one-piece, or monolithic Ripper Rotors are cnc-cut out of a single piece of specialty hardened steel.
- All rotors are surface hardened and go through an additional nitriding process to decrease corrosion and increase wear resistance.
- All rotors are symmetrical and reversible. Typically the lower end of the rotors see increased wear because they are exposed to more sand and grit.
- One-piece rotors make it impossible for the medium to get in contact with the shaft – no risk of shaft corrosion or "cutter stack breakdown."
- No need for stack tightening due to the one-piece, solid core rotors -- making for easy service.
- Tighter machining tolerances can be achieved due to the precise one-piece rotor machining, leading to smaller, optimized clearances between the cutting surfaces.
- No expensive replacement or factory rebuilds - just replace the wear parts onsite, and you're back to grinding.



Ripper rotors are cnc-cut from a single piece of specialty hardened steel.



This cutter tip design won out in extensive testing on everything from wet wipes to 2x4s (wood).



**REFINED ENOUGH
FOR WIPES & RAGS.
ROBUST ENOUGH
FOR HEAVY SOLIDS.**

DESIGNED TO BE SERVICE FRIENDLY

100% Serviceable Onsite

Is downtime time a concern?
How about expensive replacement programs or factory rebuilds?

- The XRipper twin-shaft grinder is designed to be easily maintained onsite.
- The wet-end is accessed by loosening a few nuts, and features 40-50% fewer parts than typical grinders. NO disconnecting pipes.
- Monolithic Ripper Rotors can be flipped to extend the life of the cutting elements.
- XRipper XRP in-pipe units can be serviced in as little as 60 min. (pictured, right)



✓ Worry-Free Warranty

Our industry leading 2-year, parts and labor warranty, including wear-parts, lets you know we back this product, while ensuring you'll have no repair costs for two years.

Above is an XRipper XRP (in-pipe) blade change, showing how the wet-end is easily pulled and ripper rotors are swapped out all on location.

> Estimated 60min service time on this unit

WASTEWATER SOLIDS APPLICATIONS

Equipment Suggestions For Solids Handling Applications in Wastewater

Grinder & Macerator Applications

Vogelsang offers a full line of both twin-shaft grinders and inline macerators to ensure you get the best solution for your application.

XRipper

Twin-Shaft Grinder



XRipper

Twin-Shaft Grinder

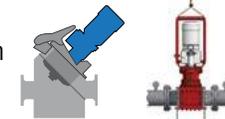


RotaCut

In-line Macerator



*Either or both

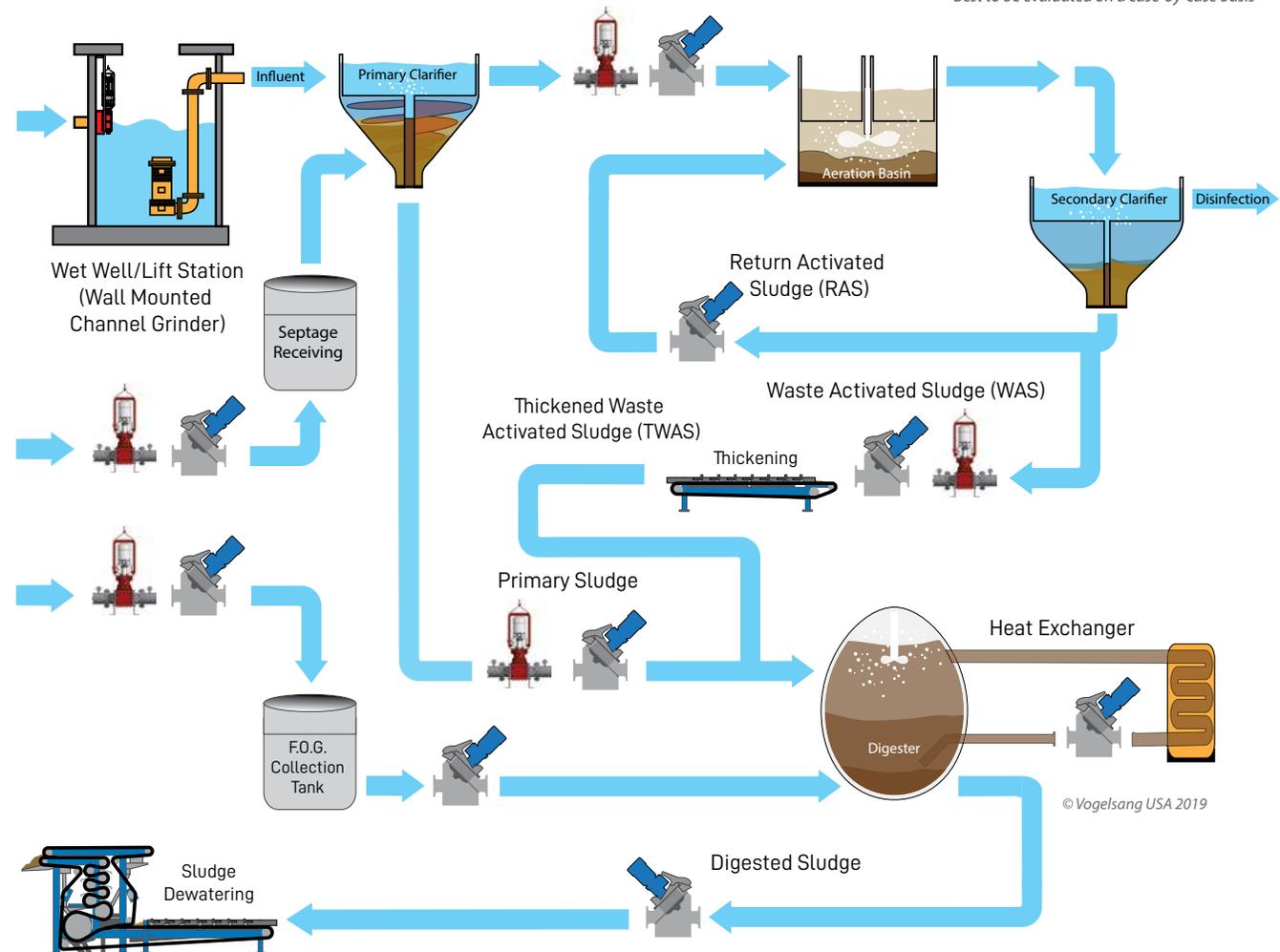


RotaCut

In-line Macerator



*Best to be evaluated on a case-by-case basis



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CHANNELS, WET WELLS, & SEWAGE PUMP STATIONS

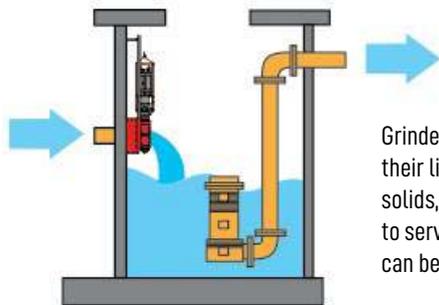
XRipper® XRC with Sewer Integration Kit New or Retrofit Options

The XRipper® XRC with the Sewer Integration Kit (SIK) is optimal for installation in any wastewater sewer. The SIK positions the XRipper® XRC directly in the sewer in several mounting arrangements. These mounting kits typically include an overflow box, brackets, and/or rails depending on the requirements.

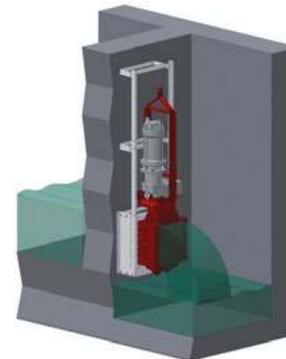
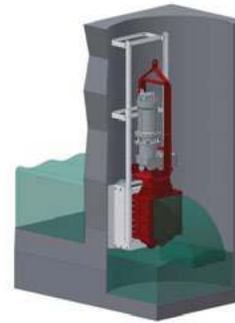
In-Channel Mounts, Kits for Straight or Round Wall Mounting

XRipper XRC unit can also be configured to work with existing brackets and rail systems for easy replacement of existing units (we match motors, flows, and other requirements, along with the option to use the same control panel).

Protect Wet-Well Pumps from Wipes and Heavy Debris



Grinder pumps and chopper pumps have their limits when it comes to handling solids, and they will always be tougher to service than a twin-shaft grinder that can be pulled and serviced on site.



DROP-IN REPLACEMENT PROGRAM

GET A NEW UNIT FOR THE COST OF A REPAIR

Facing a costly repair or replacement of your current twin-shaft grinder? Stop there. We'll get you a new service-friendly, drop-in replacement unit and you'll avoid costly replacement programs or factory rebuilds.

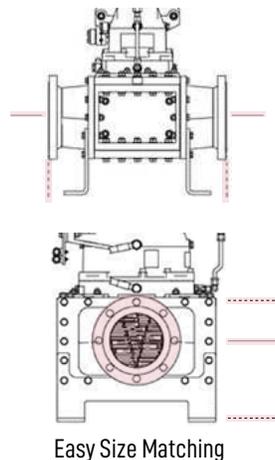
Not only is Vogelsang's XRipper twin-shaft grinder designed to fit in the exact same space as your old grinder, we are currently offering new units at the cost of your repair.

HOW THIS WORKS

- 1) Send us the repair/replacement quote on your current twin-shaft grinder.
- 2) We'll return a price-match offer on a brand new XRipper twin-shaft grinder that matches the specs of your current unit, including the grinder and motor.

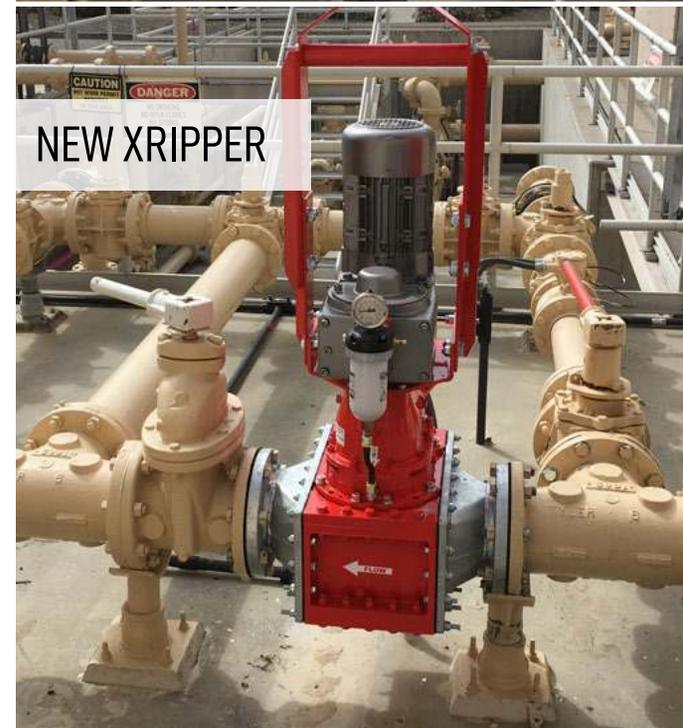
Additionally, you get:

- 2-year, 100% manufacturers parts and labor warranty, including wear and tear parts, such as cutters and mechanical seals.
- The option to use your existing control panel, so not only does the new unit drop into place, it can plug into your existing set-up and be running in no time.
- Thousands in savings over the life of your XRipper through its reliability and lower repair costs.



Grinder Replacement

- Flange to Flange & Centerline Match
- Option to use the same control panel



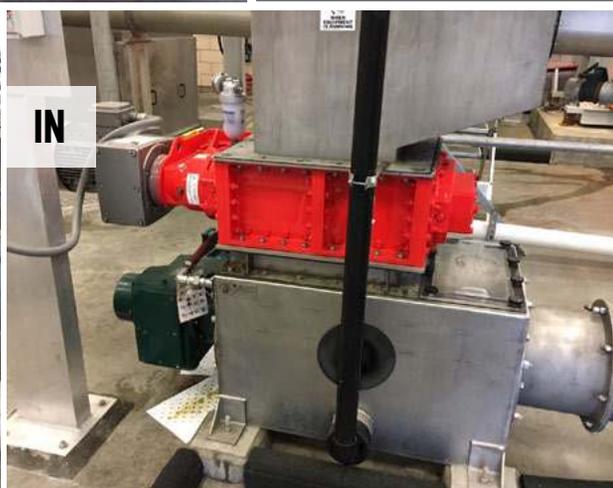
> JOIN X RIPPER NATION

PROVEN, TRUSTED

Hundreds of Successful New & Replacement Installations Across North America



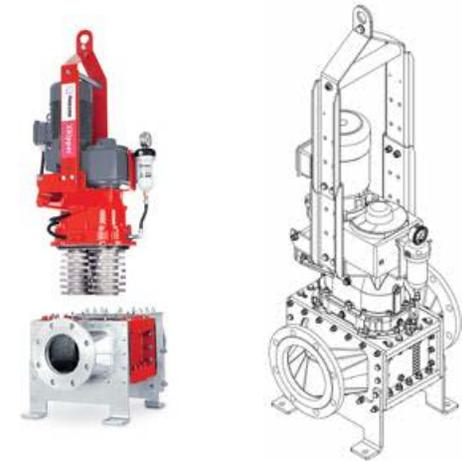
“XRipper has gone longer between blade changes than our old grinder and is less costly to maintain.”
- WWTP Operations Manager



For In-Pipe, Pipeline Applications

XRipper[®] XRP

The compact inline variant for pipe systems



Type	Blade widths	Drive power		Drive speed	Max. throughput*		Max. pressure		Flange connector		Installation width Flange to flange	
		kW	HP		RPM	m ³ /h	GPM	bar	psi	mm	inches	mm
100-90Q	6/8	1.5	2	57	85	380	8	116	Ø 100	4"	406	15.984"
136-140Q	6/10	2.2	3	46	165	720	8	116	Ø 100	4"	406	15.984"
					190	840			Ø 150	6"	483	19.016"
136-200Q	6/10	2.2/4.0	3/5	46/45	265	1,150	6	87	Ø 100	4"	488	19.213"
					280	1,230			Ø 150	6"	540	21.260"
					300	1,300			Ø 200	8"	590	23.228"
186-260Q	8/11	2.2/4.0	3/5	38	490	2,150	4	58	Ø 250	10"	692	27.244"
					550	2,420			Ø 300	12"	794	31.260"
186-520QD	8/11	4.0/5.5/7.5	5/7.5/10	38/36/41	980	4,300	4	58	Ø 300	12"	895	35.236"
					1,060	4,700			Ø 400	16"	1,099	43.268"
					1,140	5,000			Ø 450	18"	1,200	47.244"

* Maximum theoretical throughput for water and a pressure loss of 0.15 bar.

We would be happy to configure the best grinder for your application with the help of our computer-assisted design software.

For In-Channel, Inlet Applications

XRipper[®] XRC with SIK

User-friendly units for open sewers, inlet channels, ducts, and lift stations



Type	Blade widths	Drive power		Drive speed	Max. throughput*		Inlet opening	
		kW	HP		min ⁻¹ / RPM	m ³ /h	GPM	W x L (mm)
100-320QD	6 / 8	2.2/4	3 / 5	50	140	620	219 x 320	8.622" x 12.598 "
100-480QD	6 / 8	2.2/4	3 / 5	50	222	980	219 x 480	8.622" x 18.897 "
100-640QD	6 / 8	2.2/4	3 / 5	50	310	1,370	219 x 640	8.622" x 25.196 "
100-800QD	6 / 8	2.2/4	3 / 5	50	480	2,100	219 x 800	8.622" x 31.496 "
100-960QD	6 / 8	2.2/4	3 / 5	50	690	3,030	219 x 960	8.622" x 37.795 "
136-560QD	6 / 10	2.2/4	3 / 5	44	360	1,600	365 x 560	14.370" x 22.047 "
186-520QD	8 / 11	4/5.5	5 / 7.5	34	520	2,300	500 x 520	19.685" x 20.472 "
186-780QD	8 / 11	4/5.5	5 / 7.5	34	795	3,500	500 x 780	19.685" x 30.708 "

* Maximum theoretical throughput for water and optimale sewer conditions.

We would be happy to configure the best grinder for your application with the help of our computer-assisted design software.

For Large, High-Flow Channels

XRipper[®] XRG

A giant for maximum flow rates



Type	Blade widths	Drive power		Drive speed	Drive power High Capacity Unit		Max. throughput*		Width	
		mm	kW		HP	min ⁻¹	kW	hp	m ³ /h	GPM (MGD)
136-560QD+HCS	6/10	4	5	38	1x0.25	1x1.0	852	3,800 (5.4)	758	30"
136-560QD+HCD	6/10	4	5	38	2x0.25	2x1.0	1,126	5,000 (7.2)	1,067	42"
136-840QD+HCS	6/10	4	5	38	1x0.25	1x1.0	1,243	5,500 (7.9)	758	30"
136-840QD+HCD	6/10	4	5	38	2x0.25	2x1.0	1,670	7,300 (10.5)	1,067	42"
136-1120QD+HCS	6/10	4	5	38	1x0.25	1x1.0	1,650	7,300 (10.5)	758	30"
136-1120QD+HCD	6/10	4	5	38	2x0.25	2x1.0	2,246	10,000 (14.4)	1,067	42"
136-1400QD+HCS	6/10	4	5	38	1x0.25	1x1.0	2,195	9,700 (13.9)	758	30"
136-1400QD+HCD	6/10	4	5	38	2x0.25	2x1.0	3,030	13,300 (19.2)	1,067	42"

* Maximum theoretical throughput for water and optimale sewer conditions.

We would be happy to configure the best grinder for your application with the help of our computer-assisted design software.



What we offer

We provide solutions in the following sectors:
AGRICULTURAL TECHNOLOGY, BIOGAS,
INDUSTRY, TRANSPORTATION, WASTEWATER



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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QUICK REQUEST FORM