

Moyno[®]

GRINDERS



Always the Right Solution[™]

Moyno® Sets the Standard in Grinding Equipment

Moyno, Inc. offers a line of grinding equipment that meets the broad needs of any industry requiring solids reduction or waste conditioning. With superior engineering and the most diverse line of grinder equipment available, Moyno has the technology to meet your grinder challenge. Backed by years of experience, Moyno sets the standard in grinding equipment.

The Moyno® Annihilator™ grinder, with patented spacer cutters, ensures that harsh solids in the primary sludge stream are ground uniformly and efficiently. The Moyno® Pipeliner continues to surpass all other technologies when it comes to prevention of expensive maintenance of process equipment due to ragging in secondary and tertiary sludge applications. The Moyno® 500 Grinder Pump combines compact size, noise control and high performance in one cost-effective, versatile package.

Employing the use of Moyno grinder technology ensures the continual, efficient and trouble-free processing of waterborne solids encountered in today's demanding environment.

Service Program

Moyno Certified Service Facilities can service and refurbish all grinders. You can either send the worn grinder cartridge to one of our CSF's or call them to arrange pick-up. Before beginning the repairs, a representative will provide you with a quote on the required repairs and get approval to proceed. Normal repair time is 3-5 working days after approval.

Advantages

- **Reliable performance** from having the unit rebuilt to factory specs by trained personnel, reducing uncertainty and potential down-time and cost
- **Lower inventory cost** by having only one item, a re-built cutter cartridge, on hand for quick replacement
- **Additional 1 Year Limited Warranty** offers security against unforeseen product defects



Typical Applications

Moyno® Annihilator™

Municipal Applications

- Sewage screening from gravity or conveyor systems at lift or pump stations
- In-channel raw sewage at treatment plants and correctional institutions
- Primary and secondary sludge transfer from sedimentation prior to dewatering
- Solids reduction in wastewater discharged from rest areas along highways and mobile home parks

Industrial Applications

Food Processing

- Vegetable and fruit waste
- Poultry waste

Pulp and Paper

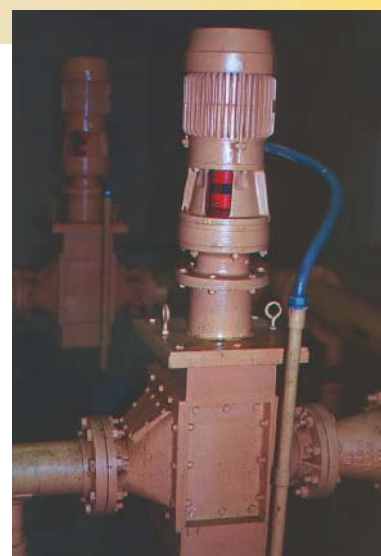
- Paper and stock waste

Hazardous Waste

- Solids reduction in paint and other chemical waste
- Solids entrained in waste fuels

Chemical

- Gum-like polymers ground to small size for processing



Moyno® Pipeliner

Municipal Applications

- Pumping station effluent
- Raw sewage
- Digested, thickened and waste-activated sludge
- Scum
- Skimmings

Industrial Applications

Pulp and paper

- Long fibers
- Waste and clarified sludge

General industrial

- Coal-fired furnace feed
- Fiberglass strands - wall board processing
- Leather waste

Food processing

- Potato skins
- Tomato dicing
- Corn kernels for corn chip processing
- Chicken processing handling heads, feet and feathers
- Fruit, vegetable and slaughterhouse waste including bones and intestines

Hazardous waste

- Alternative fuel processing
- Paint and solvent waste
- Cement kiln fuels



Moyno® 500 Grinder Pump

- Marine septic systems
- Laboratory testing
- Campground and recreation area waste
- Bilge oil transfer
- Domestic, industrial and public sewage handling installations where gravity flow mains are above the sump or are in remote locations



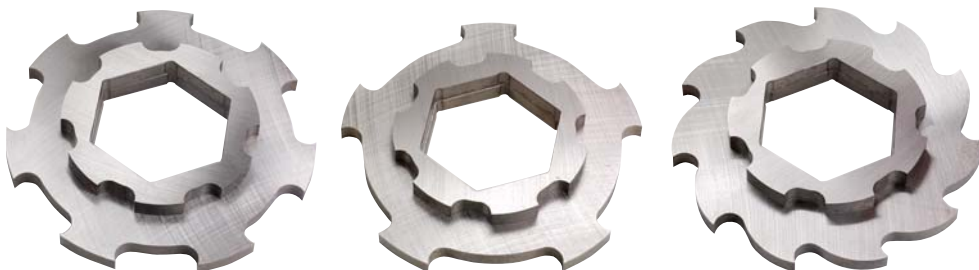
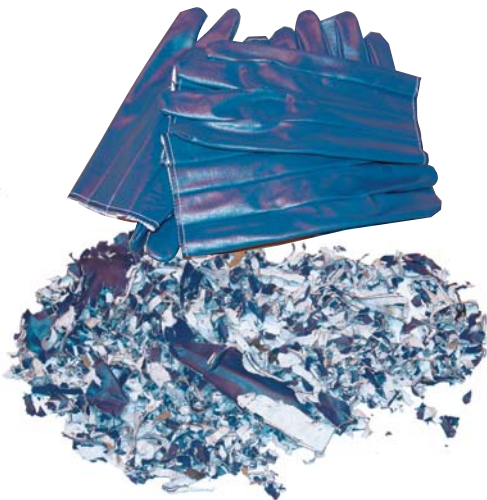
The Ultimate Twin Shaft Grinder

The Moyno Annihilator utilizes the field-proven counter-rotating, hexagonal shaft design with inter-meshing cutters and spacers. The Annihilator vastly increases the cutting capabilities of other commonly available twin shaft grinders by utilizing cutting teeth on the spacers, thereby improving the cutting efficiency while decreasing the particle size processed through the unit. This patented design also eliminates the greatest cause of failure of conventional units – that of stringy material wrapping around the spacers, causing seal failure, mechanical seizure and ultimately, shaft fracturing.

The Moyno Annihilator also retrofits other twin shaft grinder units. Same dimensions ... same piping configurations ... but far superior performance.

Patented Spacer Cutter

Why waste spacers? The Moyno Annihilator is the ultimate shredding machine utilizing bi-directional cutting teeth on the spacers as well as the cutters. The number of cutting elements in the Annihilator's cutting chamber is thereby maximized. This prevents the typical problem of string and fibrous material binding or seizing the machine.



Seal Cartridge Assembly

To avoid costly downtime and expensive unnecessary repairs, Moyno now offers the mechanical seal and bearing on separate stainless steel sleeves. This exclusive design allows for quick on-site replacement of worn components without purchasing complete cartridge designs.

Cutter Cartridge Assembly

The drive components and the cutter cartridge can be removed from the flange housing of the Series 4 design as one assembly. Replacement cutter cartridge assemblies are available for quick replacement and minimal downtime.



Features & Benefits

FEATURES	BENEFITS
Improved counter-rotating, twin shaft grinder	<ul style="list-style-type: none"> Rugged and reliable grinder designed to efficiently reduce the size of large solids entrained in fluid flows in a wide variety of applications Protects downstream equipment from being plugged or damaged from large solids, thus reducing expensive repairs and down-time Slow rotating cutters do the best job on large and dense solids, resulting in lower total cost
Optimized cutter combination ... our standard 5-tooth reversible on the drive shaft and 7-tooth reversible on the idler shaft with patented spacer cutter	<ul style="list-style-type: none"> Improved cutting efficiency with over double the cutting edges Better cleaning of stringy and plastic materials Other cutter combinations, including 11-tooth cam cutters, are available for specific application needs
Dimensionally retro-fits other twin shaft grinders	<ul style="list-style-type: none"> Adapts to existing channel and pipe works with little or no modifications, which saves installation costs
Seal Cartridge	<ul style="list-style-type: none"> Assembly mounted on a stainless steel sleeve for easy and quick replacement Mechanical seal operates against pressures up to 100 PSIG without flushing or adjustments Reliable operation equals less down time
One-piece flange housing on Series 4	<ul style="list-style-type: none"> Easier and quicker to repair with no flange bolts to disconnect Simple top cover or maintenance screen is all that's needed to by-pass the unit for a short period while the cutter cartridge is out for repair (Figure 1) Easy access clean out port/drain on each side for quick cleaning
Cutter Cartridge	<ul style="list-style-type: none"> Typical wear items contained in one assembly for quick replacement Modular construction of our Series 4 grinder allows for all five models to fit with only two cutter cartridges, requiring less replacement cartridges needed on hand as standby (Figure 2)

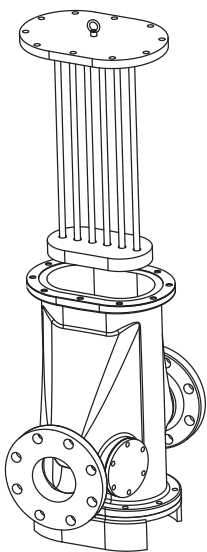


Figure 1. Maintenance screen option

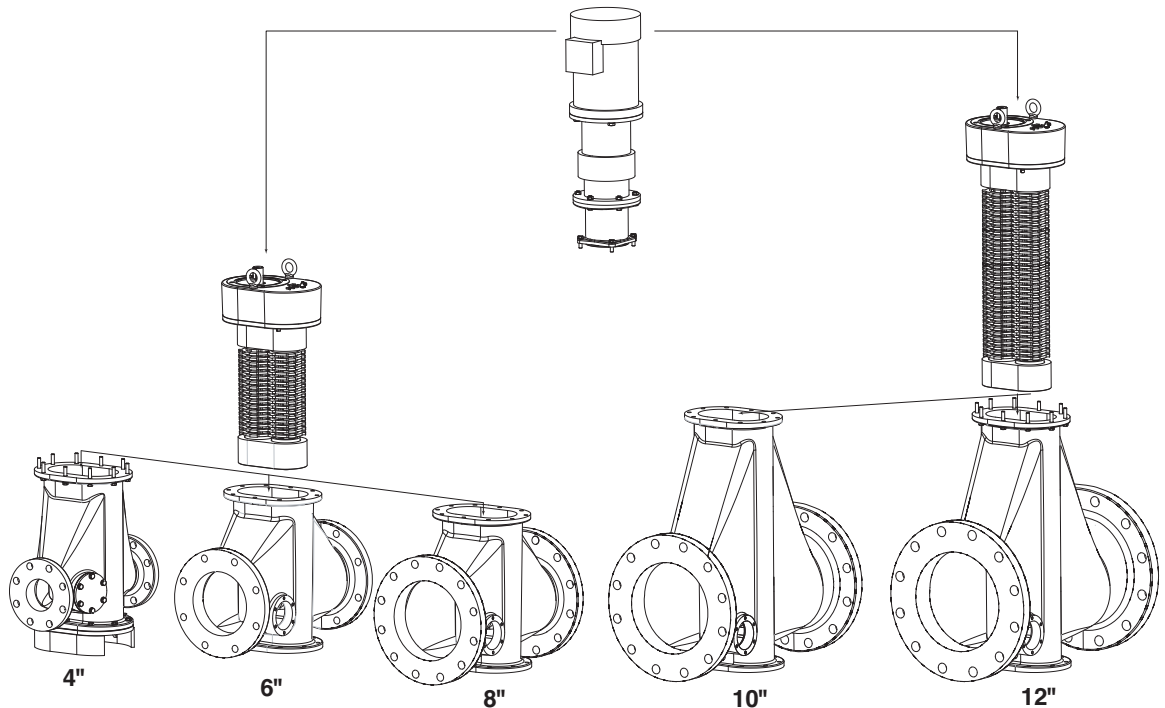
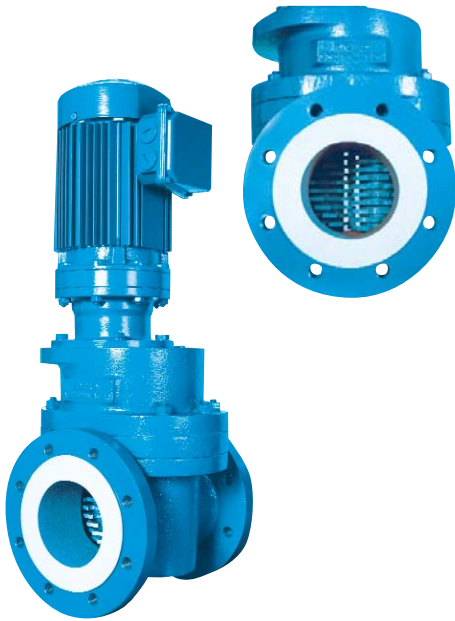


Figure 2. Modular construction allows two cutter cartridges to fit all 5 flange housings

Moyno® Micro Annihilator™



The Moyno Micro Annihilator, a compact solids reduction unit, is designed to eliminate blockages and damage to all types of pumps and process systems. The Micro Annihilator is capable of reducing solids such as rags, metal, plastics and wood to just 5mm and is ideal for wastewater and materials recycling applications. Its small size allows a variety of mounting positions to suit any new or existing pump station configuration as well as providing unmatched ease of installation that only comes with such a compact design.

The Micro Annihilator offers:

- Lower power consumption to reduce energy costs
- High torque to optimize grinding
- Optional electronic control package with auto-reverse feature to eliminate any blockage
- Flow rates to 80 GPM
- Virtually maintenance free performance for additional cost savings
- Easy retrofitting to existing pump stations
- Reversible cutting teeth for long, cost-effective service life

Moyno® Pipeliner



The Moyno® Pipeliner has been proven in thousands of applications worldwide.

- The Pipeliner design consists of a single shaft rotating a headstock
- The headstock contains tungsten carbide-tipped cutting edges running against a hardened tool steel shearplate
- The shearplate contains holes that allow fluid to pass through. Anything that goes through the Pipeliner must go through these holes
- As string and other debris pass through the holes, they are severed by the rotating cutting edge of the headstock. Large pieces of wood or plastic are pushed toward the holes, chipped and hammered into small enough pieces to eventually pass through

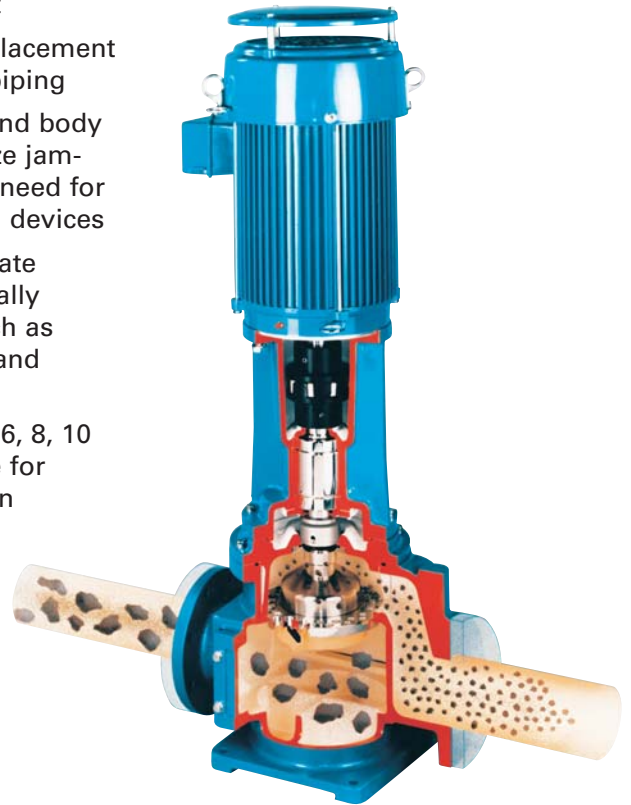
- Single mechanical seal with silicon carbide faces
- Simple, efficient design needs minimal maintenance

The Moyno Pipeliner provides effective solutions to the disruptive, time consuming and costly problems of ragging and inconsistent particle size frequently associated with handling solids in wastewater treatment processes.

Headstock and Shearplate Benefits

The technologically advanced headstock and shearplate offer the following benefits:

- Wear-compensating, spring-loaded headstock assembly maintains constant force against the shearplate and produces consistent particle size regardless of cutter wear
- Shearplate acts as a screen, rejecting stones, cans, large pieces of metal and wood that may damage pumps, filters, valves and other equipment
- Tungsten carbide cutters remain in contact with the shearplate for the life of the cutter, eliminating the need for adjustment
- Quick, on-site cutter replacement without disconnecting piping
- Headstock, shearplate and body casting designs minimize jamming and eliminate the need for expensive anti-jamming devices
- 15mm standard shearplate hole size rejects potentially damaging materials such as stones, certain plastics and large pieces of wood
- Additional hole sizes of 6, 8, 10 and 20mm are available for unexcelled cutting action

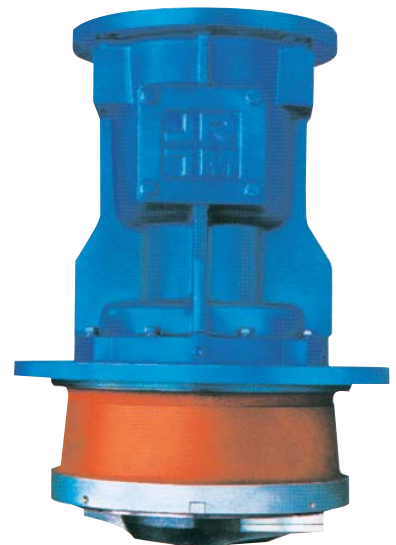


Exclusive Quick-Change Cartridge Assembly

All Moyno Pipeliners feature the exclusive Quick-Change Cartridge Assembly. Removal is simple: separate the gearmotor from the Pipeliner, remove a few bolts and lift the cartridge assembly away from the suction and discharge port casting.

Other benefits include:

- Simple one-piece design allows easy maintenance
- Remove and replace cartridge assembly in minutes with standard tools and without disconnecting piping
- Cost effective on-site servicing with off-the-shelf cartridge replacement
- Reduces costly process downtime



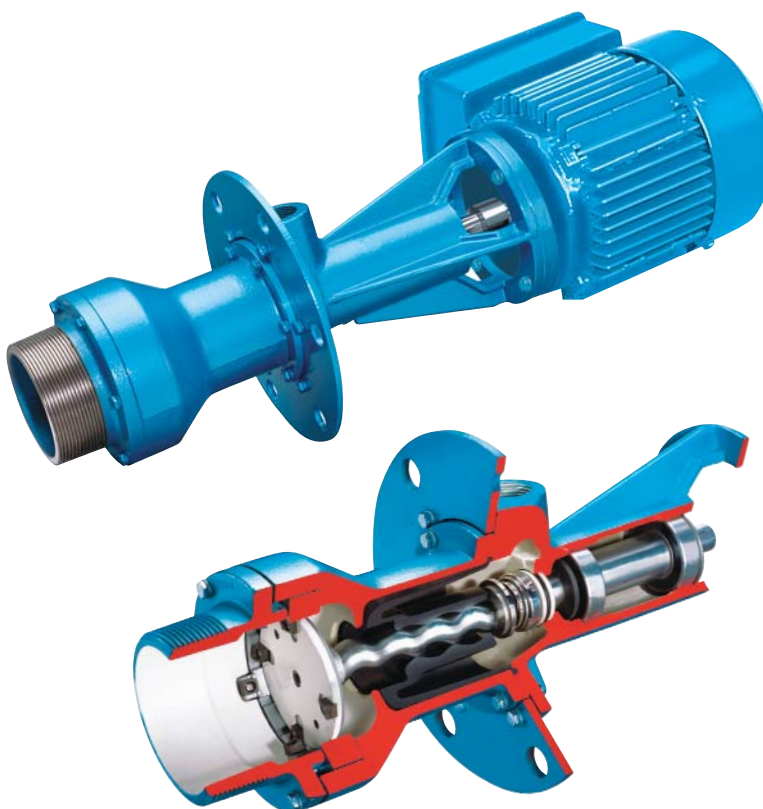
Moyno® 500 Grinder Pumps

Moyno 500 Grinder Pumps offer constant, uniform, non-pulsating flow that provides low shearing action for minimum degradation of shear-sensitive materials and low velocity capabilities for effective pumping of viscous fluids. Other benefits include:

- Compact, lightweight utility pump
- Ensures steady, repeatable flow
- Eliminates excessive operating noise

Moyno 500 Grinder Pump features include:

- Capacities to 15 GPM
- Discharge to 100 PSI
- Cast iron cutter disk
- Replaceable carbide cutting tips
- Hardened tool-steel cutter ring



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Bulletin 135-A



Always the Right Solution™

**ROBBINS
MYERS**

Fluid Management Group

Note: Information contained herein is subject to change without notice. Before making a final product selection, please contact your Moyno representative.

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