

Lindner reSource America LP



Production and engineering



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Philosophy of Lindner Machines:

Quality

- Top quality components
- Modern production-engineering

Innovation

- Product development and optimization
- Flexibility by the Lindner Modular Design

Cost Effectiveness

- High availability and low wear
- Intelligent and energy saving operation

Customer Orientation

- Broad service with US warehouse
- User- and maintenance friendly

Philosophy of Lindner machines:

„ Strong and smart machines with quality components whose goal is to be friendly for maintenance!!!“

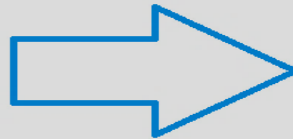
Every challenge is different.

We can fulfill all customer needs!!!



Application:

Lumps/Purgings/film: **500 lbs/hour**



Application:

Hard Plastic/AGR/postconsumer film: **20.000 lbs/hour**

Where are Lindner machines STRONG:

- **Heavy duty design**
- **TOP Quality components**
- **Safety clutch for protection of machine and components - selected machines**
- **Inspection window/movable hopper for easy cleaning and maintenance**
- **Internal force feeder for Antares and bigger machines**
- **Monofix system and different rotor design**
- **Knife and counter knife system**

Components of Lindner Shredders:

(Top German quality, service worldwide!!!)

- Gearbox:** Stiebel for all shredders
Designed in accordance to Lindner needs! In history of 10 years no trouble, doesn't make a sense to supply another brand and save \$ 3k
- Motor:** ABB for Antares and Schorch for all bigger machines
AC Motoren for Apollo
- Bearings:** FAG, SKF
- Hydraulic:** Bosh Rexroth: Antares and bigger machines
Neusson Hydraulic: Apollo machine
- Control cabinet:** RITTAL
- PLC Control:** Siemens or Sigmatek

Inspection window / Movable hopper

Apollo Machine – movable hopper:



Solution for easy maintenance and cleaning of cutting chamber. Patented by company Lindner! Exchange of knife, counter knife without climbing inside the hopper.

Easy connection of the hopper allows you to move with hopper to maintenance position when the pusher goes backwards.

Comfortable for cleaning while customer shred different kind of plastic.

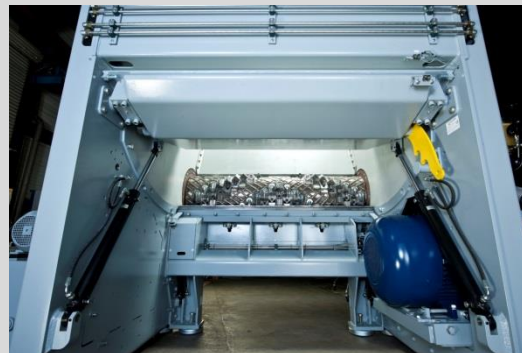
Inspection window / Movable hopper

Antares and bigger machines– Inspection window:

Simple solution for maintenance and cleaning of cutting chamber. Customer doesn't have to climb inside the Machine while he needs to change knives or counter knives. Combination of safety clutch and Inspection window allows All customers easy and quick removal of foreign objects!

Antares: Manual

Micromat, Universo: via hydraulic



Internal Force Feeder:

Increase filling volume, simplified charging!
Completely inside: No guiding, no sealing, no wrapping!
Segmented floor for thin material sheets, plates, etc.
to protect force feeder against blocking.

Height of Internal force feeder can be modified
according material needs. Higher pusher can be used
for big and light material: drums, containers
and big volume material.

Application: Antares and bigger machines



Safety clutch:



**Protection against damage of machine caused by foreign objects.
Standard for Micromat and bigger machine as standard. Antares as option.**

Safety clutch slips while foreign object is stucked between knife and counter knife.
Only part what will be destroyed is one single knife!

Knife and counter knife system:

Flat knives:

4 times changable during lifetime

Concave knives:

4 times changable during lifetime

Material of knives: Depends on application

Hard metal: For clean material
3x longer lifetime, saving costs
during maintenance.

Counter knife:

4 times changable during lifetime



Monofix System & Different rotor variants:

Monofix system:

Knife holders are not welded but placed in slots and screwed with rotor!

Precise! Strong! Easy and fast exchange!

Welded knife system:

For special application. Knife is welded to rotor.

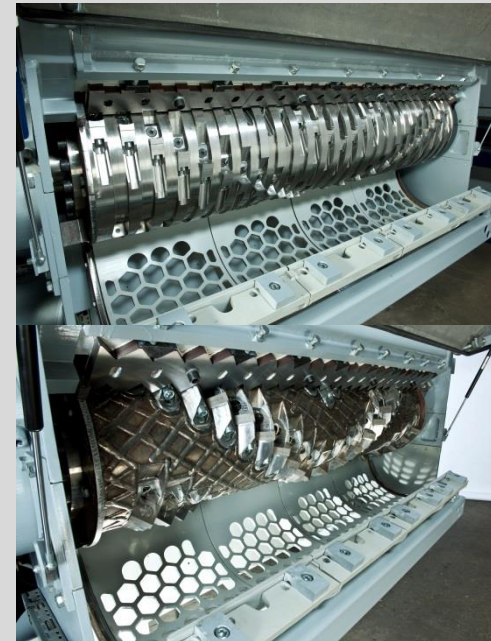
Point blade rotor: Universal – Film, Ropes, Big Bags, Plates, Pallets, etc.

(1.7 x 1.7; 2.6 x 2.6; 3.5 x 3.5; 4.6 x 4.6)

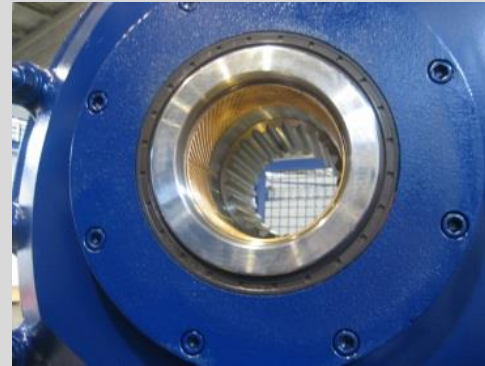
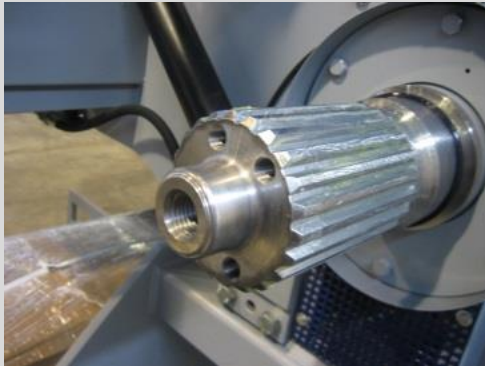
Square blade rotor: Lumps/Purgings, Hard plastic.

(1.6 x 1.6)

Welded rotor-wearing protection: for contaminated plastic.

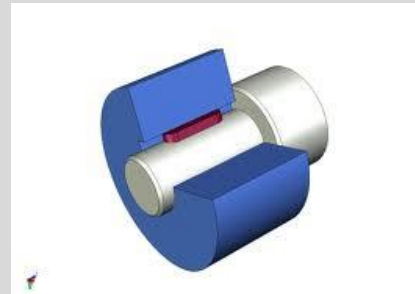
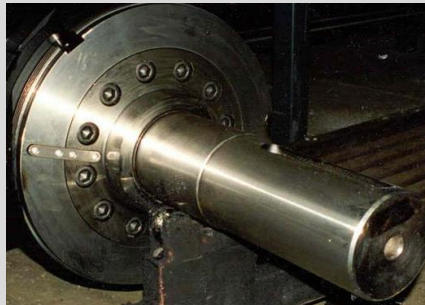


Connection Gearbox – Motor:



Lindner solution: Screwed rotor shaft with evelute teeth. Expensive system, very stable and strong! Gearbox can be removed/exchanged easily.

Competitor's solution:



Groove and key connection: Gearbox cannot be removed after a while. Customer has to cut the shaft while key is worn out.

Double wall sealing + sealing ring rotor:

For protection of shaft and bearings against process material.

NO WRAPING

NO STUCKED material between cutting chamber and main frame.

NO STUCKED material between screen and rotor!



Apollo Series:

Strong, reliable, economic! Designed for Companies with low to medium material volumes. Thanks to numerous optional features the shredder can be tailored precisely to customers material requirements. Start shredding efficiently !



Model	Rotor diameter (in)	Rotor length (in) approx.	Blade sizes (in)	Motor power (hp)	Machine dimensions L x W x H (in)	Feed opening material L x W (in)	Weight (lb) approx.
Apollo 700	14.5	25	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	20/30; 41	90 x 68 x 79*	27 x 47	7,938
Apollo 1000	14.5	39	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	41; 61	104 x 81 x 79*	39 x 55	9,700
Apollo 1300	14.5	51	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	61; 74	104 x 92 x 79*	51 x 55	12,130
Apollo 1600	14.5	62	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	75; 102	126 x 91 x 79	62 x 66	14,995

Antares Series:

Smaller brother of Micromat Plus!
The robust design and numerous equipment options allows you to be competitive with most exacting challenges.



Model	Rotor diameter (in)	Rotor length (in) approx.	Blade sizes (in)	Motor power (hp)	Machine dimensions L x W x H (in)	Feed opening material L x W (in) approx.	Weight (lb) approx.
Antares 1000	17	39	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	61; 75	108 x 102 x 117	39 x 81	14,774
Antares 1300	17	51	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	75; 102	120 x 102 x 117	51 x 81	15,876
Antares 1600	17	62	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	102; 122	132 x 102 x 117	62 x 81	19,404
Antares 1900	17	74	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	122; 150	144 x 102 x 117	74 x 81	20,948

Micromat Plus Series:

Machines designed for most exacting recycling customers as well as plastics processing plants! Thanks to several options Micromat Plus is the best seller on the market!



Model	Drive	Rotor diameter (in)	Rotor length (in)	Blade sizes (in)	Motor power (hp)	Machine dimensions L x W x H (in)	Feed opening material L x W (in)	Weight (lb) approx.
Micromat Plus 2000	Basic	22	78	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	122; 150; 180	164 x 106 x 131	79 x 92	29,767
	Performance	22	78	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	150; 180; 218	196 x 112 x 131	79 x 92	30,870
	Extend	22	78	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	150; 180; 218	215 x 112 x 131	79 x 92	32,634
Micromat Plus 2500	Basic	22	98	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	150; 180; 218	164 x 106 x 131	98 x 92	29,768
	Performance	22	98	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	150; 180; 218	196 x 112 x 131	98 x 92	33,737
	Extend	22	98	1.6 x 1.6 1.7 x 1.7 2.5 x 2.5	150; 180; 218	215 x 112 x 131	98 x 92	35,500

Universo Series:

The ideal solution for waste and recycling companies with high production volumes and most exacting needs.



Model	Rotor diameter (in)	Rotor length (in)	Blade sizes (in)	Motor power (hp)	Machine dimensions L x W x H (in)	Feed opening material L x W (in)	Weight (lb) approx.
Universo 2200 Single drive	29	82	1.7 x 1.7; 2.5 x 2.5 3.3 x 3.3; 4.5 x 4.5 5.7 x 5.7	1 x 150 1 x 180 1 x 218	234 x 113 x 154	83 x 59 (83 x 84)*	39,690
Universo 2200 Double drive	29	82	1.7 x 1.7; 2.5 x 2.5 3.3 x 3.3; 4.5 x 4.5 5.7 x 5.7	2 x 150 2 x 180	242 x 113 x 154	83 x 59 (83 x 84)*	46,305
Universo 2800 Double drive	29	109	1.7 x 1.7; 2.5 x 2.5 3.3 x 3.3; 4.5 x 4.5 5.7 x 5.7	2 x 150 2 x 180 2 x 218	273 x 113 x 154	110 x 59 (110 x 84)*	59,976

Washing and processing systems

Lindner reSource America LP can offer solutions from single machines to complete Washing or processing systems.

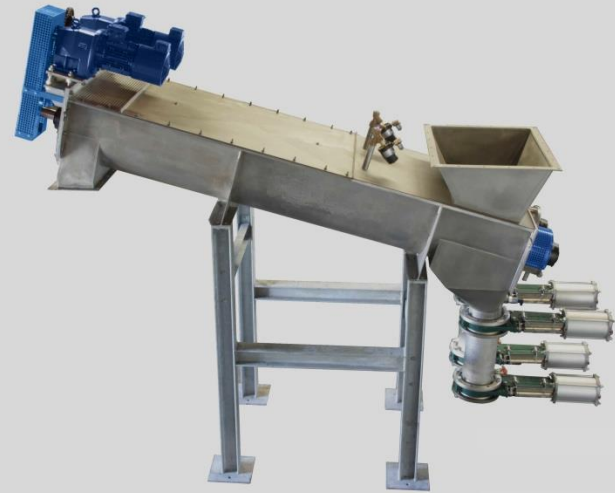


Single machines:

- Pre-separating screw
- Friction washer
- Screw conveyor
- Sink float tank
- Mechanical drier
- Thermal drier
- Bunker

Pre-separating screw:

For prewashing and separating of heavy contaminations as glass, metal, stones, etc. Housing and screw built in stainless steel 1.4301. Support frame made of mild steel. Level sensor and infeed water supply valve. Inspection doors located on the upper side. 2 discharging valves DN 200 for the heavies.



Friction washer:

For cleaning of the flakes by very efficient friction – removal of dirt, sand, labels. Housing and screen made of stainless steel, rotor built in heavy duty version, screwed paddles!

Screen basket: 1/5 inch! Supporting frame for housing and main drive. AC-drive with pulleys, v-belts and protection guard.



Screw conveyor:

For collecting and transporting the material from the friction washer to the wet granulator. Housing and screw made of stainless steel, 1.4301.



Sink float tank:

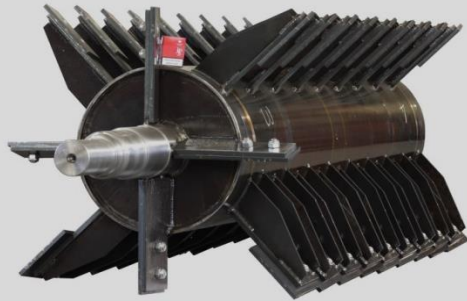
For separation of the contaminants or other plastics with gravity $\geq 1\text{gr/cm}^3$ from the PE / PP flakes.

Made of Stainless steel 1.4301, in a stable, welded sheet-profile steel construction, Support frames of I-section steel S235JR galvanized. One centralized drive for five paddle rollers. Extraction done by screw conveyor driven by Helical gear motor. Discharge of the fraction with gravity $\geq 1\text{gr/cm}^3$ via drag chain conveyor or pneumatic valves.



Mechanical drier:

For cleaning and drying of the flakes. The material turns between fast running blades and big drum with holes. The material is forced with shape of blades to the end of drum and additional blower system help to material continues to next step. Water goes through screen (ca 1/10 inch) outside the drum.



Thermal drying unit:

For final drying of the flakes. Mixing chamber for mixing the product with hot air, made of stainless steel, diameter 22 inches with elbow and connection flange to the entrance of the ventilator.

Drying spiral in compact version, length about 65 ft, made of mild steel with sensor PT 100 to control the mixing temperature. Housing with 4 inspection doors. heating device, capacity app. 250 kW
GAS HEATING!



Bunker:

For storage and continuous feeding of extrusion lines. Bunker with one mechanical mixers and two extraction screws.

Steel construction on frame.

Capacity approx.. 15 m³



Granulators

Tollless opening : all the machine up to the 60 series can be opened and inspected without using tools

Huge screen surface: our screen surface is 50% the rotor diameter, this helps to avoid dust and customer can produce more with less energy applied

Jig for blades det up : the correct distance between knives and counterknife is guaranteed , distance can be checked out-side the grinder with great safety advantages.

For high temperature application, machines are equipped with a cooling system.



**Lindner reSource America LP offers all machines
for size reduction and cleaning of plastic material!**

Looking forward to our future bussiness!!!