

- Laboratory mills
- Machine-side granulators
- Slow running granulators
- Central granulators
- Lump granulators
- Ancillary Equipment

Product overview

The Formula 1 in granulators



series 80



series 150



series 180



series 250



series 260

more >>



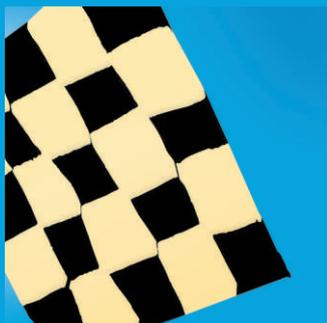
Hellweg

Maschinenbau

Hellweg granulators start in the *Pole-Position*

Granulators for processing valuable plastics waste

Hellweg granulators are used by plastic processing companies to compound thermoplastic waste arising from production - especially engineering thermoplastics such as ABS, PA, PA 6.6 GF, TPE, TPU, PBT, PC, PS, POM but also PE and PP, involving dosing of ground material again with virgin material during running production, or addition of the material in another application at a later stage.



The material to be handled falls into the cutting chamber of the Hellweg granulator via a guiding chute and is repeatedly shredded by cutting between rotating and fixed knives, until it passes an attached sieve as ground material. The sieve extends over the lower half of the grinding chamber and is exchangeable. This enables appropriate sieve perforation to be used for the particle size required.

Construction of the Hellweg granulators in terms of size or drive power is generally made depending on the size and shape of the material to be ground and the required throughput performance.



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application example
sprues



Depending on the design, size and version, Hellweg granulators are characterised by the following particular features:

Characteristics influencing regrind quality

- Gentle angled cutting avoids burden at peak loads, guarantees a high value regrind that is not thermally degraded and that is distinguished by sharp edges, high homogeneity and low level of dust
- Optimum speed range of the machines according to the size and purpose, thereby optimum speed range for low energy consumption, low level of dust and quiet operation
- Sieves with sieve hole diameters from 5-30 mm, designed to prevent formation of long, thin regrind, large sieve area enables high throughput and low level of dust as a result of fast material delivery
- Very high throughput at low drive power

Engineering, design characteristics

- Highly precise production, housing welded or assembled with screws and dowel pins
- Stiff, non-twisting rotors produced from one solid piece of metal, no imbalance
- Closed rotors: compared with open rotors, the material is held better over the full extent of the rotor and is therefore granulated faster
- Double-sided exterior rotor bearings, no penetration of dust and therefore longer bearing life, no contamination of the ground material by lubricant
- Knives in high quality knife-grade steel, high durability
- Scissors cut: Constant cutting gap over the entire knife width, so optimum specific energy consumption
- High performance direct drive through transmission belts and gears at low rotation speed
- Compact design, less need for space
- Wear resistant versions for reinforced plastics
- Extensive consideration of safety measures regarding risks according to the equipment safety law (GSG: Gerätesicherheitsgesetz) and the UVV (Unfallverhütungsvorschrift) accident prevention regulation, CE approval mark

Operation, maintenance, cleaning

- Opening of the beside-the-press granulators without tools, enabling fast cleaning with changes of colour and material, faster sieve and knife replacement
- Structural design for easy, complete cleaning through absence of dead corners and use of inspection openings
- Direct mounting of the knives on solid rotors, eliminating need for rotor knife adjustment
- Both rotor and stator knives can be re-sharpened many times due to their structural design
- Start-up of the machines with filled grinding chambers ensured under normal operation conditions

up to 50% less drive power: enormous energy savings are possible due to the geometry of the Hellweg slanted cut blades – without reduction of the throughput amount. An advantage that gives a payback hour by hour.

up to 70% less dust fractions, no formation of bridges or long spike-shaped material: Hellweg granulators produce cleanly cut sharp-edged dust-free regrind with high homogeneity and without thermal degradation. Special screens prevent formation of spike-shaped material in the regrind and guarantee high process security. The shape of the slanted cut blades additionally guarantees self-dosing material intake, as well as fast and gentle material output. The type of plastic to be granulated plays only a secondary role. Whether soft, hard, tough, brittle, or even fibre reinforced. All such materials can all be equally well granulated, and successfully.

up to 90% less cleaning time and secure handling: sure and fast handling always stand in the foreground when it comes to the design of a Hellweg granulator. By this is meant e.g. fast access to the grinding chamber, no readjustment of the rotor blades, as well as extremely fast cleaning and fast changing of screens and blades. As an example, the entire cleaning procedure for a Hellweg machine-side granulator takes place in just 5-10 min.

Hellweg granulators
Made in Germany



The rotor

Machined out of a single solid metal preform, the slanted cut rotors are produced with high precision, possess highest possible weight for a high moment of gyrational torque and therefore provide precise and calm running with high concentricity. The high concentricity is constantly maintained throughout, as no rotor blade adjustments are made.

The bearing system

The strong Hellweg exterior flange bearing systems are a direct integral part of the granulator housing and therefore provide an ideal forced fit. Each Hellweg exterior flange bearing system is equipped with a Hellweg bearing protection system. This prevents regrind contamination by lubrication grease and successfully ensures continuous long-term protection of the bearings from fine regrind fractions.

The concept

The stable Hellweg construction without welding seams on the rotor and without use of pedestal bearings additionally has a direct influence on blade lifetime. This is since blade lifetime extends in relation to the vibration arising in the grinding process becoming lower. The advantage: long and secure processing along with lowest levels of dust generation.



series 80 strong laboratory mill

Mini with high performance processing of the smallest sprues



The small, compact Hellweg 80 series of beside-the-machine granulators are used beside-the-press or directly mounted on the frame of an injection moulding machine. There they grind, among others, sprues arising from small to very smallest components and products in so-called micro injection moulding of, for example, mobile phones in telecommunications, or medical products such as syringes, drain tubes, etc. Other application fields are the laboratory area and prototyping.

Working width
50 mm

Rotor diameter
80 mm

Motor output
0.55-1.5 kW

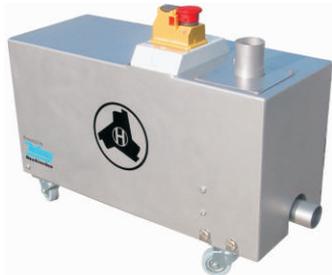
Number of rotor knives
3

Number of stator knives
2

Rotor speed
280 rpm

Nominal weight
approx. 53 kg

Grinding output
approx. 1-6 kg/h



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application example
small hollow articles / micromoulding



series 100

Highest ground material quality through fast material delivery

The Hellweg 100 series beside-the-machine granulators represents an economical solution for use alongside injection moulding machines with a medium amount of sprues to be processed. The space needed is extremely low due to the compact design.



These granulators guarantee optimum material handling and fast material delivery due to the design of the grinding chamber. In addition, the use of co-rotating rotor discs prevents ground material from becoming trapped between the rotor and the wall of the enclosure. Thermal degradation of the ground material produced is consequently prevented.

Working width
97 mm

Rotor diameter
100 mm

Motor output
0.75-1.1 kW

Number of rotor knives
3

Number of stator knives
2

Rotor speed
160 rpm

Nominal weight
approx. 40 kg

Grinding output
approx. 3-12 kg/h



series 150

Revenue source: raw material savings through return of sprues and film edge strip processing



Working widths
120/230/340 mm

Rotor diameter
150 mm

Motor output
1.5 - 4 kW

Number of rotor knives
3

Number of stator knives
2

Rotor speed
280 rpm

Nominal weight
approx. 170-280 kg

Grinding output
approx. 20-60 kg/h

The Hellweg 150 series beside-the-machine granulators can be connected very easily to one or more injection moulding machines, due to their especially flat construction. Small sprues, sprue cores, sprue gating and complete sprue and runner systems can be removed after opening of the moulding tool and then ground on the spot. Introduction of material can take place as desired, with a chute, free-fall hopper or conveyor belt. Material can be removed by connecting freely available standard extraction fittings. A tall rack is offered as an option to fill the ground material into a bulk container or bags.



application example
PET preforms



series 200

PET recycling: processing of PET preforms and PET bottles



Working widths
240/320/410 mm

Rotor diameter
200 mm

Motor output
2.2-5.5 kW

Number of rotor knives
3-5

Number of stator knives
2

Rotor speed
280 rpm

Nominal weight
approx. 340-550 kg

Grinding output
approx. 50-120 kg/h

The Hellweg 200 series beside-the-machine granulators are suitable to meet the requirements of the blow moulding industry, especially for grinding of PET preforms and PET bottles. The grinding chamber is constructed in such a way that optimum material input is ensured, in particular, also with lightweight hollow items such as bottles, canisters and other containers.

On the other hand extremely bulky sprue cores, large sprue gating and complete sprue and runner systems are suited very well for the big chamber openings of the 200 series.



series 250 slow running "Slotter"

Slotter - low dust granulation with 25 rpm



The Hellweg "Slotter" ("Slow Cutter") type roll mill works without use of sieves and with low speed of just 25 rpm, so that gentle granulation of sprues and gating parts takes place, preventing thermal degradation, ensuring faster output of ground material and regrind with an extremely low level of dust, that is often a decisive criterion to ensure that the material can be returned to the production process.

Working widths
150/250/330 mm

Diameter of milling rolls
105 mm

Motor output
1.1-2.2 kW

Number of milling rolls/
advance shredders
2-4 / 1-3

Number of stator knives
4-8

Rotor speed
25 rpm

Nominal weight
approx. 260-380 kg

Grinding output
approx. 5-20 kg/h

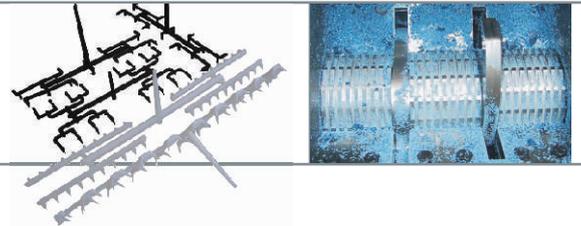
Extremely fast and easy cleaning is enabled by division of the grinder into two sections.



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application example
GRP sprues



series 180

Central processing, high flexibility and reliable grinding



Operation of only one central Hellweg granulator can be advantageous, compared with buying several beside-the-machine granulators. Lower investment costs and better machine utilisation can then mean greater profitability. On-line recycling directly at the injection moulding machine is not always possible. Not every product can withstand being mixed together with regrind and not every regrind material can be moulded again without intermediate treatment, e.g. to separate fine fractions. So rejected parts, sprues and runners can be collected within a plastics processing operation and passed to the Hellweg Series 180 central mill fitted with extraction equipment. Both lightweight and thin-walled, as well as heavy and thick-walled parts can be ground.

Working width
240 mm

Rotor diameter
180 mm

Motor output
3-5.5 kW

Number of rotor knives
3-5

Number of stator knives
2

Rotor speed
490 rpm

Nominal weight
approx. 400 kg

Grinding output
approx. 70-120 kg/h

The machines are offered in a wear resistant version for processing of reinforced plastics. When equipped with intake roll equipment, the machines can process film edge strips.



series 260 and series 260 BR lump granulator

Central grinding - simple, fast and quiet



The Hellweg series 260 granulators are used for central grinding of sprues, but also sheets, mouldings, sprue flash and especially hollow items such as bottles and canisters, etc. Due to the compact design, these Hellweg granulators enable user-friendly insertion of material into the granulator from a low height. Extraction equipment with cyclones and bag supports are integrated into the machines.

Working widths
410/820 mm

Rotor diameter
260 mm

Motor output
7.5-22 kW

Number of rotor knives
3-5

Number of stator knives
2

Rotor speed
490 rpm

Nominal weight
approx. 1180-2000 kg

Grinding output
approx. 250-700 kg/h

Full sound proofing with the use of a feeding hopper insulated against noise is offered as an option, enabling very quiet operation.



application example
flat cakes / large lumps



series 300 and series 300 BR lump granulator

Central granulators for large quantity tasks



On account of their low input feeding height, the Hellweg 300 series granulators enable granulation of large quantities of sprues and stabile moulded parts. They can therefore be fed either by a conveyor belt or by hand. All of the 300 series granulators work on a double slanted cut principle that guarantees "aggressive" material intake behaviour. The machines can be optionally supplied with a noise-protection cabin or a noise absorbing intake shaft.

Working widths
300/450/600/900/1200 mm

Rotor diameter
300 mm

Motor output
7.5-37 kW

Number of rotor knives
3-5

Number of stator knives
2

Rotor speed
490 rpm

Nominal weight
approx. 1400-3850 kg

Grinding output
approx. 350-1000 kg/h

The BR version is equipped with a special "peeling" action rotor that enables single-stage shredding and granulation of solid start-up blocks or sheets.



series 450

High performance granulators for heavy parts and high throughput



On account of the extremely high stability of the entire machine housing and the high moment of gyration torque of the solid rotor machined from a single metal preform, the Hellweg 450 series granulators enable gentle yet high throughput shredding and granulation of thick parts, sheets, pipes and profiles, etc.

Working widths
600/1200 mm

Rotor diameter
450 mm

Motor output
22-75 kW

Number of rotor knives
3-5

Number of stator knives
2-4

Rotor speed
490 rpm

Nominal weight
approx. 1500-5400 kg

Grinding output
approx. 600-1400 kg/h

Both straight and slanted housing design versions are available, so that the most suitable material intake behaviour can be obtained.



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application example
hollow body / canister / crate



series 600

Large granulators for large tasks



On account of their enormous size, Hellweg 600 series granulators achieve the highest throughput rates, yet they can be used very flexibly. Depending on the application, three types of rotor are available, with 3, 5 or 7 blades. When equipped with a 3-blade rotor, large volume or large surface area plastic parts can be shredded and granulated, such as bumpers from the automotive industry and from disassembly of used cars, plastic tanks, door inner liner trim, etc. The 5-blade rotor provides high throughput for smaller housings or 5-litre canisters. The 7-blade rotor is used to achieve high sequential cutting frequency, for example, in shredding and granulation of paper and thin films.

Working widths
600/1000/1500 mm

Rotor diameter
600 mm

Motor output
37-110 kW

Number of rotor knives
3-7

Number of stator knives
2-4

Rotor speed
490 rpm

Nominal weight
approx. 2000-11000 kg

Grinding output
approx. 800-2500 kg/h



series RC “In-pipe film edge strip cutter”

Profit-generating volume reduction of edge effects in cast film production



Cast films are fabricated by cutting off of the two film side edges in order to ensure consistent thickness over the whole film width. The continuous strips that arise are cut into short pieces with the Hellweg film edge strip shredder. The cuttings produced can then be transported over long distance pipeline for disposal, or passed to a subsequent compounding operation.

Working width
154 mm

Rotor diameter
180 mm

Motor output
0.55-1.1 kW

Speed
700-2800 rpm

Nominal weight
approx. 55 kg

Dimensions (W x L x H)
650 x 280 x 255 mm



application example
profiled edge strips



series RS

Intake equipment for edge strips from cast film production



In cast film production, the side edges of the film are cut off in order to ensure consistent thickness across the entire film width. The Hellweg intake equipment for cast film can take in two film edge strips with different speeds, which can be freely set as required via frequency converters. The roll-based intake system adjusts itself to the given edge strip thickness (also during a running process). Maintenance or set-up work by the operator is not required. Depending on the material or its surface characteristics, intake rolls are available in smooth or knurled steel and in a polyurethane version.

Working widths
80-300 mm

Rotor diameter
150/200 mm

Motor output
3-5.5 kW

Number of rolls
2

Roll diameter
100 mm

Move-in-feeding speed
0-145 m/min



series RST Thermoform

Efficient punched skeleton processing



Strips of foils or sheets are punched out in the thermoforming process, especially for packaging products (cups, blister packs, boxes, etc). The thermoplastic punch skeleton waste arising here is re-processed by the new "RST Thermoform" granulator from Hellweg Maschinenbau into reusable regrind material. RST Thermoform granulators are fitted with special feeding equipment that can be provided in optional vertical or horizontal versions. Punched skeleton feeding into the granulator hopper takes place with frequency or dancer arm control, whereby the intake is adjusted according to the feed rate of the production machine, so that fluctuations are compensated.

Working widths
650-1500 mm

Rotor diameter
150/200/300/450 mm

Motor output
3-7.5 kW

Number of rolls
2

Roll diameter
100 mm

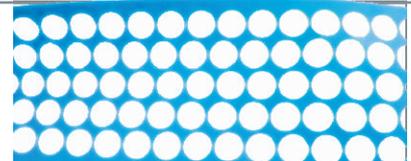
Move-in-feeding speed
0-145 m/min



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application example
punch skeleton waste



series LSZ pulling & cutting at once

Processing of profiled sheet edge strips



Plastics granulate is made into sheeting with cast extrusion and processed further with thermoforming into, for example, profiled dimpled sheet, green roof matting, etc. The two edge areas are trimmed to remove swollen areas that usually arise at the edges. The Hellweg LSZ 150/100 edge strip granulator enables processing of these profiled sheet edge strips, an application area where feeding with conventional feeding equipment is problematic. The equipment can be switched on and off by a push switch in order to prevent tearing off of the edge strips.

Working width
148 mm

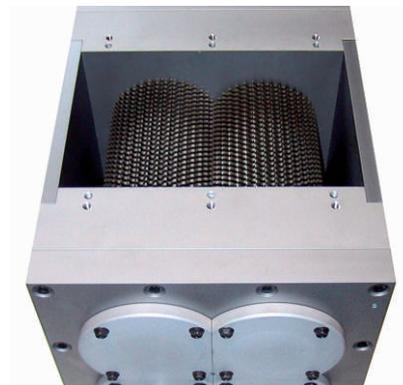
Rotor diameter
100 mm

Motor output
1.5 kW

Speed
1-60 rpm

Grinding output
approx. 60 kg/h

Grinding output
approx. 3-4 mm



Sound insulating cabinets

Effective noise protection concept

Hellweg noise protection cabins are designed according to size and the application and offer individually tailored noise absorption concepts in compact or modular designs for effective noise insulation. Steel sheet and insulation thicknesses are adapted in a variable way to guarantee ideal noise reduction for each application. All elements are clad with mineral wool filled or foam insulated steel sheet, with perforated steel sheet on the inner side. Depending on the use of the machine, the acoustic filling can also be offered with an optional film cladding to protect against trickling out of the filling.

Insulation thicknesses
80/100/150 mm

Noise insulation
approx. 25 dB(A)

Insulation material
BS60 mineral wool

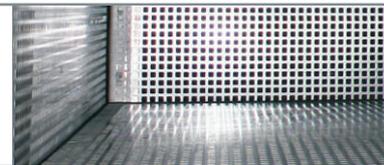
Base material
St1203- 2 mm

Inner steel sheet
perforated steel
sheet RV5-8

Standard sizes
as from the 150 series



inside a sound
insulating cabinet



Film cutter

Blown films brought into shape – with a sharp cut

Film cutters from Hellweg are used in blown film lines to cut open the laid down blown film, e.g. in HDPE, LDPE, LDPE, etc. and to convert them into web strip form. Cutting of the film takes place here with commercially available high sharpness cutting blades with long working lifetime, which are held against a stop plate in the film cutter housing and additionally held in place by magnets. The low maintenance film cutters are fitted with quick-change devices that enable changing of blades during running production.



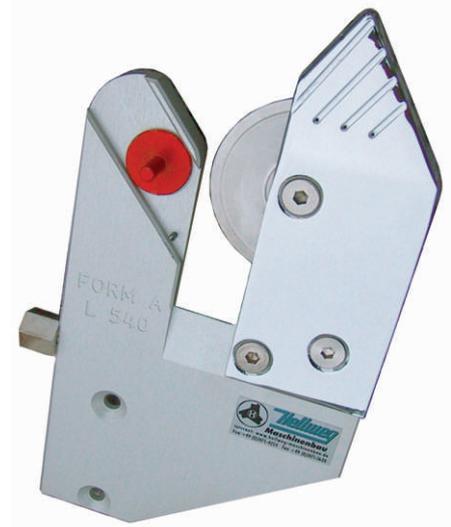
Base material
Aluminium

Base material chrome apex
Brass, hard chrome plated

Dimension guide slot
0.8 mm

Blade bracket
magnetic

Number of air nozzles
18 pcs



series R 200/20

Processing of film sealed edge strips

Edge strips arise during film production with seaming of the film. The Hellweg R 200/20 edge cutting equipment shreds the edge strips that are fed to it, from where they are passed to a granulator for further processing.

The equipment can be optionally used for one or two edge strips. Special guides and a hardened knife support plate ensure long life.

Working width
200 mm

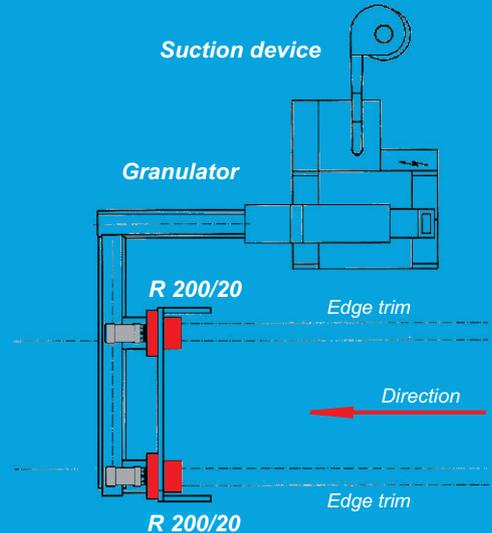
Cut thickness
16-18 mm

Motor output
2.2 kW

max. Cut area
2000 mm²

Nominal weight
205 kg

Dimensions (W x L x H)
1183 x 678 x 934 mm



Quick contact:

www.hellweg-granulators.com

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