

NXT:GRAN

SHREDDER-FEEDER-EXTRUDER
COMBINATION

Tried-and-tested
system sets
new standards





Post Industrial Recycling (PIR)

Residual products left behind by the industrial production of plastic products are a high-quality and valuable raw material. To ensure that they can be fed back into production without losses, we build recycling machines with maximum technological sophistication to handle this task flawlessly. When building these machines, we focus primarily on economic and environmental sustainability.

The **NXT:GRAN** offers maximum performance in all areas. Zero-waste production between input and output guarantees that the full value of the material is preserved. At the same time, as with all NGR technologies, input of work and energy are reduced to an absolute minimum.

The NXT:GRAN – Tried-and-tested system sets new standards

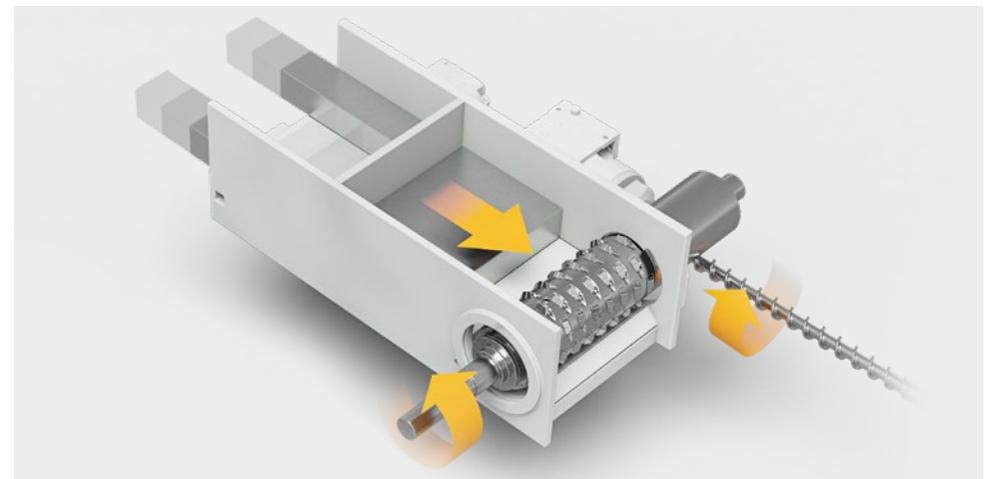
The **NXT:GRAN** continues to combine size reduction, feeding and extruding into one extremely efficient work step (**ONE-STEP technology**). In doing so, it draws upon the experience gained from having over 1000 patented shredder-feeder-extruder combination installations worldwide.

THE WORKING PRINCIPLE

Using the material efficiently in each work step: The patented shredder-feeder-extruder combination provides maximum performance for extremely high output and quality. First, the materials being fed are pressed against the solid shredder shaft by either one or two hydraulic pushers. The shredded material is then conveyed into the extruder by the revolutionary Duo-Direct feeder. Both of these process components feature load-dependent and fully automatic control. In the extruder, the polymer is efficiently melted and homogenized, and, if necessary, the melt is vacuum degassed at the same time.

The cutter outlet and extruder intake components are placed close together so the heat generated in pre-processing is

transferred into the extruder. This design feature optimizes the energy balance and gives the **NXT:GRAN** extremely efficient operation.



Robust and hassle-free

STRAIGHTFORWARD SIZE REDUCTION PROCESS

Low speed shredder blades continuously cut the plastic as it is being fed. Even bulky parts and materials, such as start-up lumps, can be processed without preliminary size reduction.

AUTOMATIC CONTROL, SIMPLE OPERATION

Even with discontinuous feeding, the **NXT:GRAN** enables simple **DUMP & RUN operation through continuous fill level measurement during size reduction.**

Thanks to the tried-and-tested **ON/OFF single-button operation**, it is easy to start up the system or shut it down smoothly at any time. It is also possible to restart within less than a minute after an unexpected shutdown.



Smooth operation thanks
to **high-performance size
reduction process and
maximum ease of operation.**



"Over more than 20 years of continuous refinement and thanks to our patented and thus one-of-a-kind shredder-feeder-extruder combinations, we have revolutionized each step in plastic recycling."

Norbert Leitner / Assembly Engineer

Optimal, high-performance

ONE-OF-A-KIND SHREDDER DESIGN

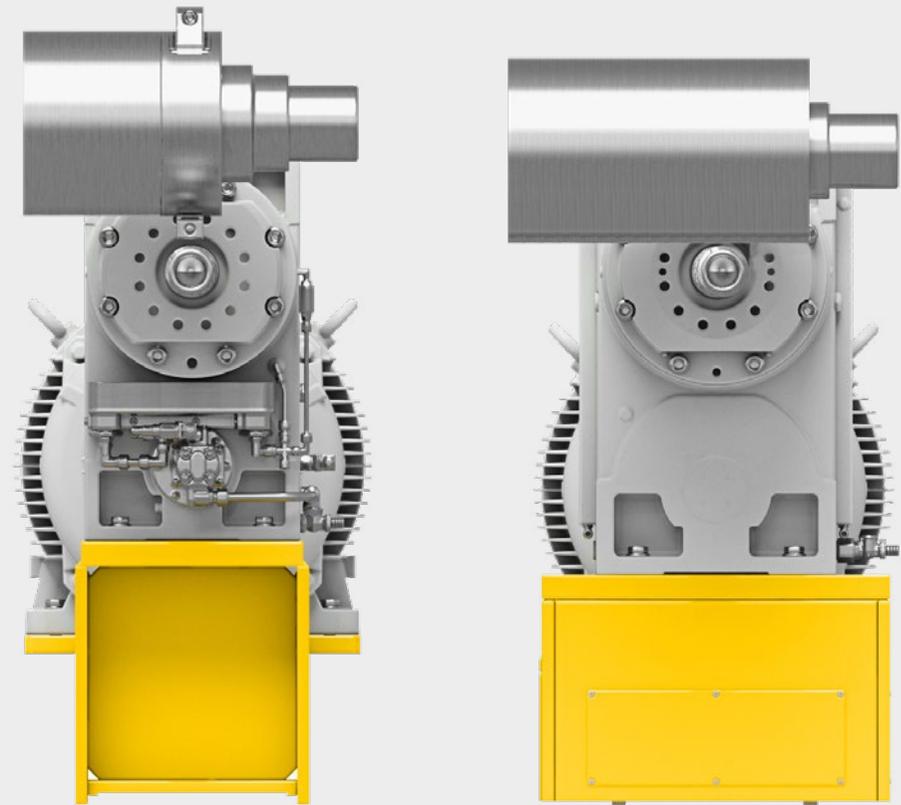
The shredder including housing is optimally designed and configured for the entire bandwidth of materials and material shapes. The feed, cutting speeds and cutting geometries are a perfect match for each other.

An additional advantage: Regardless of variation in how the material is fed, the cutting power remains stable—the operator's influence on performance is reduced to an absolute minimum.



In processing, cutting power is increased, while using the material with greater efficiency and flexibility, and the operator's influence on the processing output is minimized.

Improved, maximum output



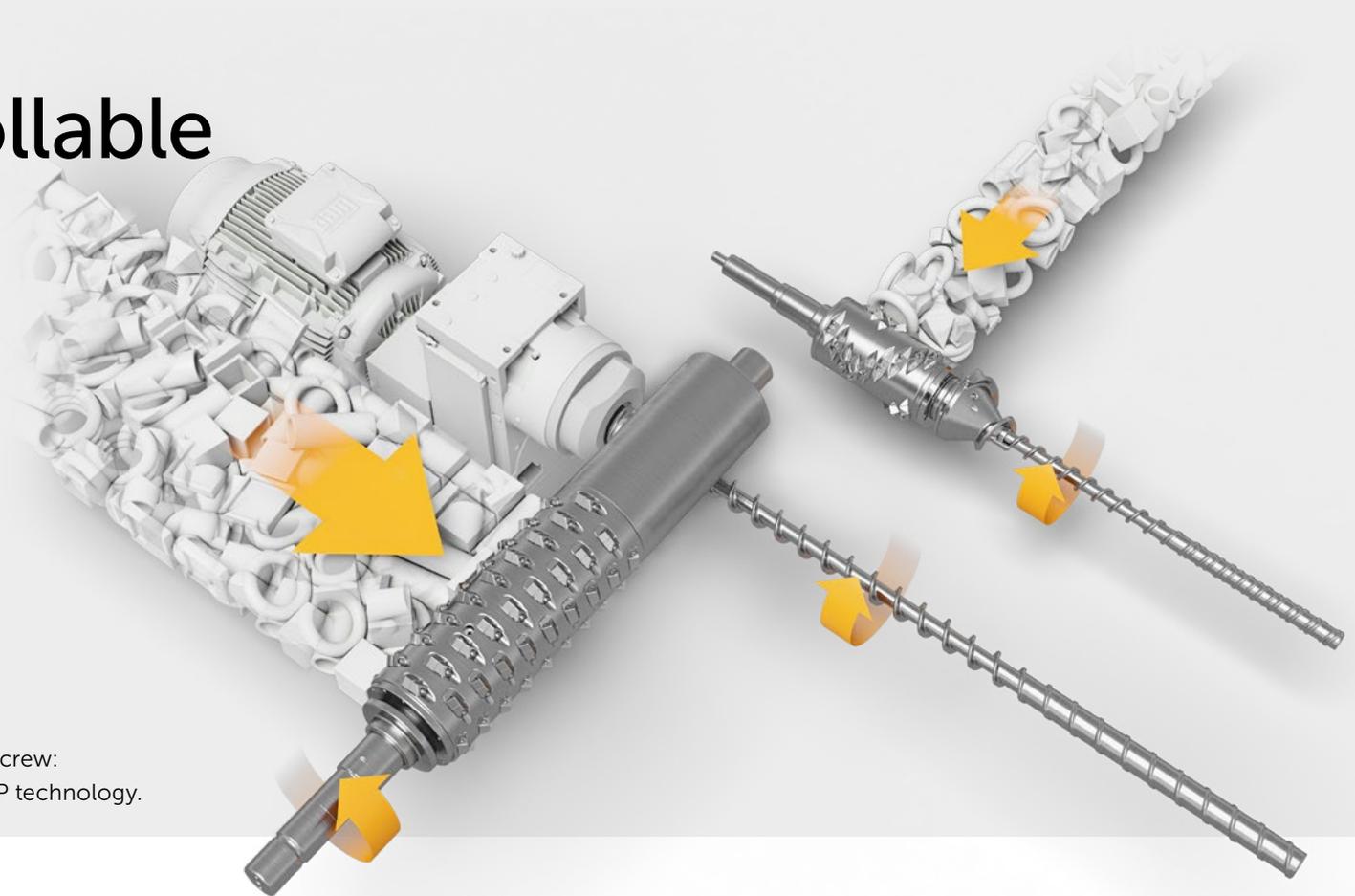
NGR technology for clear advantages: Position differences of shredder, extruder screw, gear and drive.

HIGHER OUTPUT RATE THANKS TO OPTIMIZED FEEDER

An additional performance boost is provided by the **Duo-Direct feeder**, which is positioned with a positive fit to the extruder screw. Thanks to this one-of-a-kind and innovative design, the feeder provides a considerable increase in output rate over the entire material spectrum: The chopped material is fed to the extruder at a constant rate and with operational reliability over

a wide process window—all while the throughput rate remains consistently high. In addition, the technology permits operation with optimized temperature control, which reduces the required cooling performance.

Reliable, optimally controllable



SingleShaft vs. decoupling of shredder shaft and extruder screw:
NGR makes use of the significantly more reliable ONE-STEP technology.

LOSS-FREE MATERIAL TRANSFER

To guarantee maximum flexibility in operation and loss-free material transfer, NGR decouples the shredder from the extruder. This is a more reliable method than the alternative, because it means the cutting speed and extrusion speed can be controlled independently of each other.

This enables optimal control of the cutting power, tailored to the requirements of the extrusion stage when processing different material shapes.

High quality, high standards

MANY YEARS OF EXPERTISE CREATE THE BEST POSSIBLE EXTRUDER

With regard to specific requirements, NGR experts have been creating customized, application-specific extrusion screws for the entire spectrum of thermoplastics for more than 20 years. NGR draws upon this wealth of experience as one of its core competencies: The result is a significantly increased output rate with simultaneously efficient material processing. The end of the process is extremely high-quality pellets.

"Requirements on plastic recycling are becoming more stringent all the time. Our expertise allows us to attain the best homogeneity of the melt and process the material with outstanding efficiency."

Bernhard Pichler
Test Center Manager



Automatic, correct

USER-FRIENDLY AND 100% RELIABLE

The control of the **NXT:GRAN** is designed intuitively and can be carried out using a touchscreen with a clear layout. Operating the system is absolutely safe and reliable thanks to the intuitive arrangement of operating elements, logical menu guidance and pictograms that are easy to understand.

The integrated recipe management of the operating element also increases reproducibility and guarantees correct setting of the machine parameters in the event of changes in the material feed.



The operation of the
NXT:GRAN reflects **highest
ergonomic level in the
industry.**

Malfunction-free, accessible from all sides

PROBLEM-FREE MAINTENANCE THANKS TO MAXIMUM EASE OF ACCESS

The faster and easier it is to carry out maintenance and repair work, the shorter the associated downtimes will be. The **NXT:GRAN** features outstandingly easy-to-maintain accesses.



SHREDDING CHAMBER

The entire feeding hopper features a slide-adjustment giving open-access to the cutting area. By avoiding the confined space, this is a significant contribution to worker safety.



SHREDDER KNIVES

The entire shredder cylinder with the shredder knives is freely accessible for maintenance work.



ACCESSIBLE EXTRUDER BARREL

The extruder cover can be opened easily using a swiveling mechanism. This gives safe and maintenance-friendly access to extruder barrel and band heaters.



CENTRAL MEDIA CABINET

All fittings are arranged in the media cabinet in an easy-to-read manner. This enables easy control of the cooling water flow, for example.



SHREDDER SHAFT

The shredder shaft with its cooling water supply is protected behind a maintenance flap.



FREELY ACCESSIBLE SLIDE HYDRAULICS

The entire rear panel of the system can be opened, making all components of the slide hydraulics freely accessible.

NXT:GRAN At a glance

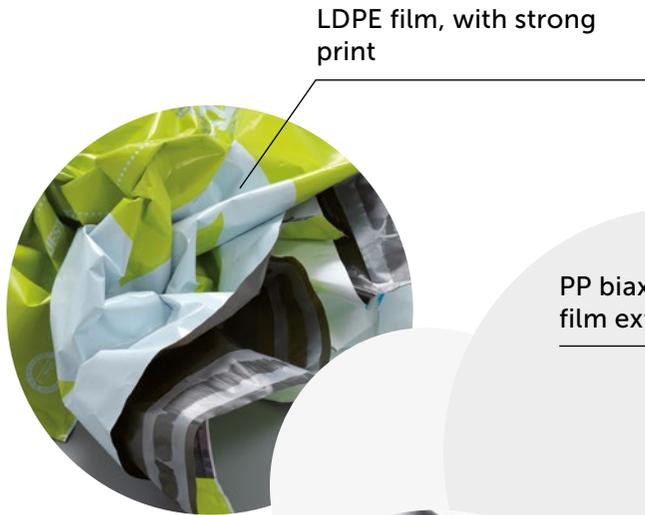


- 1) **Material feed** (conveyor belt, roll feeder, air separator)
- 2) The **shredder** chops the material being fed to the extruder via the **Duo-Direct feeder**.
- 3) The heated material is melted and homogenized in the **extruder**. **Single or double venting systems** remove volatile components in the melt flow
- 4) The melt is cleaned, depending on the application with a **standard screen changer** or **high-performance melt filter**
- 5) A **pelletization unit** at the end of the recycling process produces uniform recycling pellets

Application examples materials



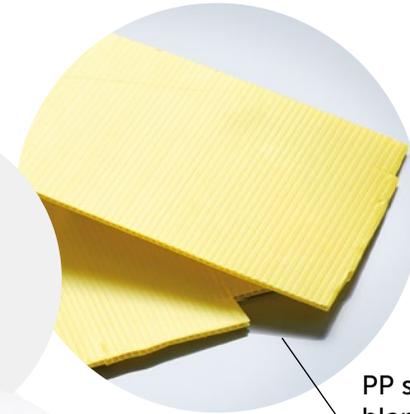
More materials PA, PC, PPS, ABS, EVA, biodegradable plastics, blends, etc.



LDPE film, with strong print



PP biaxial oriented film, film extrusion



PP sheets blanks, waste



PE artificial turf, production waste

HDPE automotive blow molding parts



Start-up lumps



PEEK pipes pipe extrusion

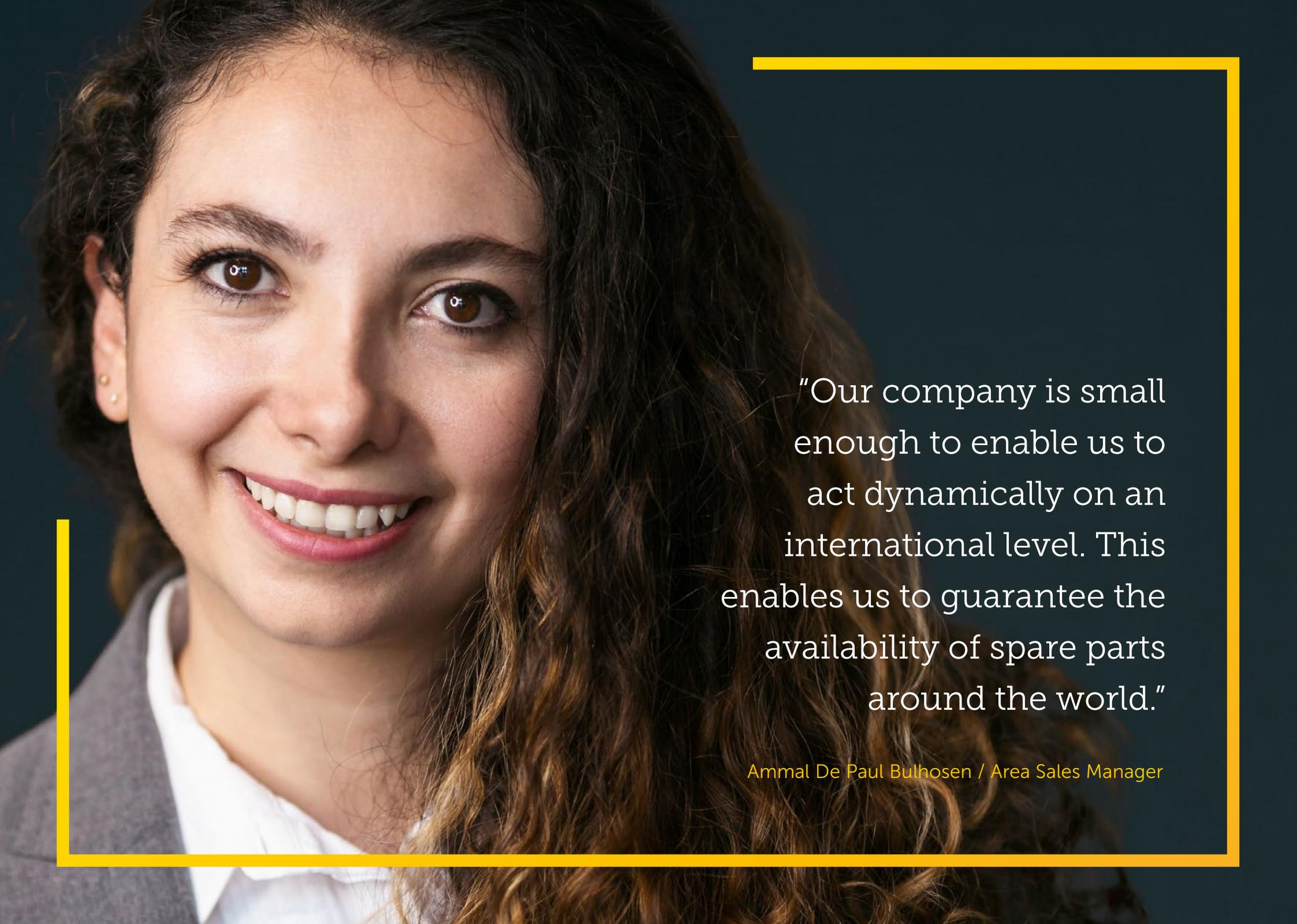
Pellets – the end result

PELLET SIZE

In addition to the material quality, uniform pellet size ensures optimal recycling and homogeneous mixing. By doing so, NGR indirectly helps ensure consistent quality of your end products.

One major factor here is the wide range of pelletizing options, each perfectly tailored to the specific material characteristics and customer needs. Options include water ring / hot die-face, strand or underwater pelletizers.





"Our company is small enough to enable us to act dynamically on an international level. This enables us to guarantee the availability of spare parts around the world."

Ammal De Paul Bulhosen / Area Sales Manager

Perfect satisfaction included



CONTINUOUSLY AVAILABLE SPARE PARTS PACKAGES

For the shortest standstill times and smooth start-up without delay, NGR offers its customers spare part and commissioning packages. These are adapted to the individual requirement and guarantee 100% reliability.



FASTEST SPARE PARTS SUPPLY

Spare components can be requested conveniently by phone, email or the NGR spare parts web shop. Stocked spare parts are delivered within 24 hours in Europe.



HIGHEST LEVEL OF PROFESSIONAL MAINTENANCE & TRAINING

The most professionally trained technicians are standing by around the world, ready to maintain and repair the systems. In addition, each maintenance appointment also includes follow-up training for the operators—to ensure maximum performance.



IMMEDIATE REPAIR SERVICE

In case of a sudden malfunction, a on-call service is available six days a week (Mon–Sat) for rapid-response repairs. These are either carried out by remote access or by local service partners with short turnaround times.



RETROFIT & USED MACHINES

NGR works pro-actively towards improving cost-effectiveness and extending service life: For example, after certain time frames, we recommend that individual components be replaced or software updated for better performance.

Specifi- cations



More materials PA, PC, PPS, ABS, EVA, biodegradable plastics, blends, etc.

	Extruder screw Ø [mm]	Cutting width [mm]	max* [kg/h]	max* [lbs/h]
NXT:GRAN 65-50	65	500	250	550
NXT:GRAN 75-50	75	500	280	620
NXT:GRAN 75-70	75	700	300	660
NXT:GRAN 85-70	85	700	500	1100
NXT:GRAN 95-70	95	700	600	1320
NXT:GRAN 105-100	105	1000	700	1540
NXT:GRAN 115-100	115	1000	800	1760

* Maximum output values for LDPE in accordance with NGR company standard for non-vented machines.

Basically, the output of the system depends on the material characteristics and composition (including MFI, surface imprint, extent of contamination, moisture, bulk density, etc.)

Contact us with **your challenge**

YOUR PLASTIC WASTE IS THE RAW MATERIAL OF TOMORROW.

In our recycling test centers, we can prove the NGR reprocessing performance on your own scrap materials. We look forward to the opportunity to prove it to you in person.



Working
for a better
future

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