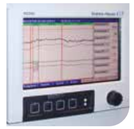
Special features and services

recoSTAR technology is designed for **high automation** and **user-friendliness.** The touch screen enables a simple start-stop procedure, RFID-chip user levels and screenshots (USB port). This ensures **highest efficiency** and consequently **fast ROI.** Features are either standard or can be added according to customer's requirements.

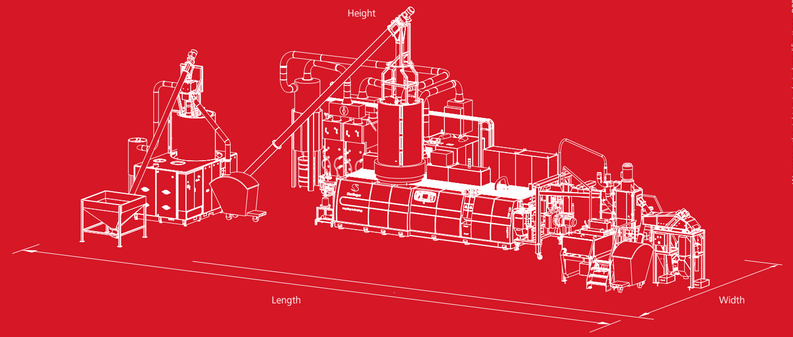
Online support
Using a DSL connection, the online support establishes a connection from Starlinger to the recycling line at the customer – wherever in the world it is installed.

Inline viscosimeter
The continuously measured IV of the PET melt during extrusion helps to control quality and indicates any required change of settings.

Online colour measurement
Colour deviations from a set standard are detected and serve as an inline quality control of the input material. Deviations can be offset by adding additive (either liquid or masterbatch).



Online writer and archiving
The online writer collects all relevant production data for secure traceability. Up to 50 parameters can be stored in short intervals in an internal memory and thus are saved in the event of a power cut.



Dimensions in mm	recoSTAR PET FG / FG+			
Type	**125**	**165**	**215**	**330**
Height	7250	7250	11700	11700
Height in inches	*290*	*290*	*460*	*460*
Width	11100	13400	16000	11700
Width in inches	*440*	*530*	*630*	*460*
Length	21600	22800	32000	27100
Length in inches	*850*	*900*	*130*	*1070*

Technical data				
Type	**125**	**165**	**215**	**330**
recoSTAR PET FG / FG+				
Output [kg/h]	650 - 900	1200 - 1650	2000 - 2400	2500 - 3300
*Output [lbs/h]**	*1430 - 1980*	*2640 - 3640*	*4400 - 5300*	*5500 - 7280*
AC drive [kW]	160	315	530	630 (2 x 315)
Extruder				
Screw diameter (L/D) [mm]	125 (40)	165 (40)	215 (40)	2 x 165 (40)
Screw diameter (L/D) [inch]	*4.9 (40)*	*6.5 (40)*	*8.5 (40)*	*2 x 6.5 (40)*
Energy consumption [kWh/kg]	0.25 - 0.35	0.25 - 0.35	0.25 - 0.35	0.25 - 0.35
High-vacuum [mbar]	≤ 10	≤ 10	≤ 10	≤ 10
Downstream equipment				
Strand pelletiser				
Underwater pelletiser	●	●	●	●
Automatic strand pelletiser	alternative	alternative	alternative	alternative

● standard

Starlinger recycling technology
Furtherstrasse 47a
2564 Weissenbach, Austria
T: + 43 2674 800 3101
F: + 43 2674 86328
E: recycling@starlinger.com
recycling.starlinger.com

Starlinger Head Office
Sonnenuhrgasse 4
1060 Vienna, Austria
T: + 43 1 59955-0, F: -180

Starlinger & Co Gesellschaft m.b.H.
A member of Starlinger Group

All data depending on design!

RECYCLING TECHNOLOGY

RECYCLING LINE recoSTAR PET FG/FG+

for production and post-consumer scrap, preforms, bottle and sheet flakes, **integrated pre-drying,** dust-free processing, **energy efficient,** high ROI, **full automation**

Starlinger

RECYCLING LINE recoSTAR PET FG/FG+

State-of-the-art recycling technology for the in-house recycling of PET flakes from bottles, preforms, strapping bands and sheets, as well as for the **recycling of post-consumer bottle flakes** after the washing process. The **end product is melt-filtrated, uniform granulate** that can be used for a wide range of food-contact applications.

recoSTAR FG and FG+ are **cost-effective PET food-contact recycling machines** with compact footprint, minimal energy consumption and moderate IV increase.

The PET flakes
are fed into the pre-drying unit on top of the extruder. The material is dried, heated and crystallised, either by application of hot (dessicant) air, or vacuum.
This treatment contributes a,lready to outstanding decontamination results.

The high-vacuum degassing extruder
reduces viscosity loss during extrusion and purifies the melt from volatile contamination. The water-free vacuum pump reduces production and maintenance costs.

Continuous filters
for dirt particle removal are available with or without backflushing. The direct material flow reduces stress on material. Finest filtration available on request.

The underwater pelletiser
is energy-saving, features a simple start-up procedure, and can replace the strand pelletiser or automatic strand pelletiser. Pellet size and bulk density are adjustable for all pelletising systems.

The inline crystallisation
after underwater pelletising ensures optimised foot-print, energy savings, and high crystallinity.
Online colour measurement guarantees first-class colour values.

Alternative energies
such as natural gas or steam can be used as a cost-friendly alternative for heating.

Resin-like characteristics
of the rPET in terms of form, flow behaviour, crystallinity, humidity, dust content, etc.
Suitable & accepted for a wide range of food-contact applications.

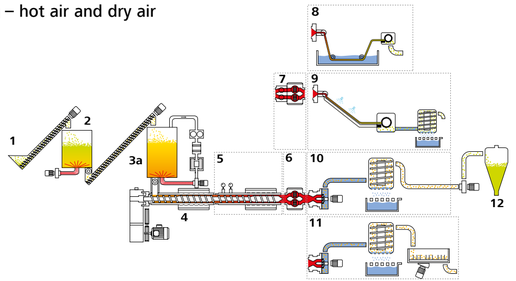
Advantages

- Food-contact decontamination
- FIFO ensures uniform treatment
- Energy-saving through inline processing
- Improved production efficiency
- User-friendly touchscreen and high automation
- Modular design provides flexibility – e.g. single-mode extruder operation for recoSTAR PET 330

RECYCLING TECHNOLOGY

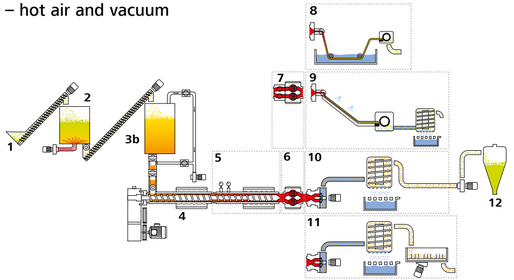
Starlinger recycling technology allows **utmost flexibility** for the customer and adjustment to the ever changing requirements in the market or applications through **modular design**.

2-stage drying – hot air and dry air



recoSTAR PET FG	Food contact	FDA/EFSA	Decontamination/ VOC	Brand owner approved	Low AA level	IV increase
	✔	✔	✔		optionally	✔ with reduced output

2-stage drying – hot air and vacuum



recoSTAR PET FG+	Food contact	FDA/EFSA	Decontamination/ VOC	Brand owner approved	Low AA level	IV increase
	✔	✔	✔✔		optionally	✔✔ with full output

PET flakes are heated and dried in a two-stage process, first with hot air, then by means of dry air or vacuum. The special design of the dryer outlets results in center flow prevention, consistent residence time and FIFO processing. This ensures decontamination for food contact applications and ideal preparation for the extrusion process with IV increase. A choice of filtration and pelletising systems is available. Once installed, the unit can be equipped with an SSP reactor (iV+) to increase viscosity and decontamination levels.

1. Feeding screw
2. Hot air drying unit
3a/b. Pre-drying unit/pre-drying unit under vacuum
4. Extruder
5. High-vacuum degassing extruder
6. Melt filter without backflushing
7. Melt filter with backflushing
8. Strand pelletiser
9. Automatic strand pelletiser
10. Underwater pelletiser
11. Underwater pelletiser with inline crystallisation
12. Storage silo