High automation, increased energy efficiency and a wider range of applications
are the key highlights of the recoSTAR dynamic recycling lines and complement a well-proven technology.

The **rECO** concept is an innovative approach that improves the energy efficiency of the recycling line. The overall energy consumption kW/kg is reduced by approx. 10%. The benefit for the client is reduced costs, benefit for the environment is reduced carbon footprint.
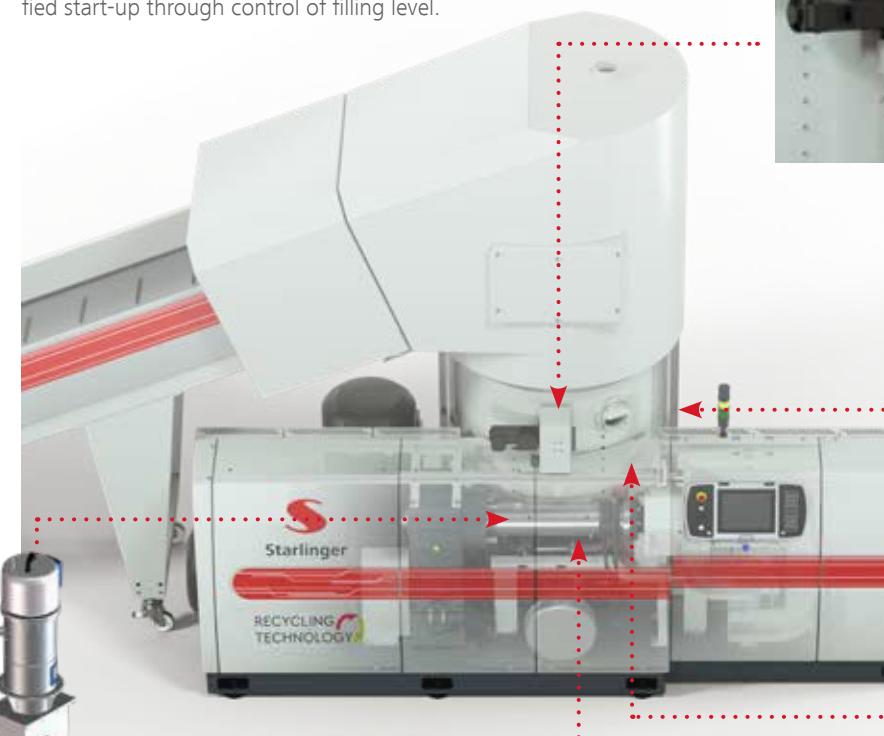
The **rECO package** includes amongst others:
▶ New drive concept for the main extruder drive
▶ New drive configuration for SMART feeder
▶ Main motors in IE3 standard
▶ Barrel heating with infrared heaters
▶ Energy recovery solutions are optionally available for various process steps.

rECO

Height

Width

Length

We reserve the right to technical modifications. DPR-24821-08V

Feeding via cyclone in-line with production line, nip roll feeder and conveyor belt; simplified start-up through control of filling level.

Dynamic automation package: constant production, higher output and flexibility. Optimal operation point through speed controlled SMART feeder drive and actively controlled input slider.

Large SMART feeder for a wide range of input materials. Enlarged operation window due to water cooled bottom.
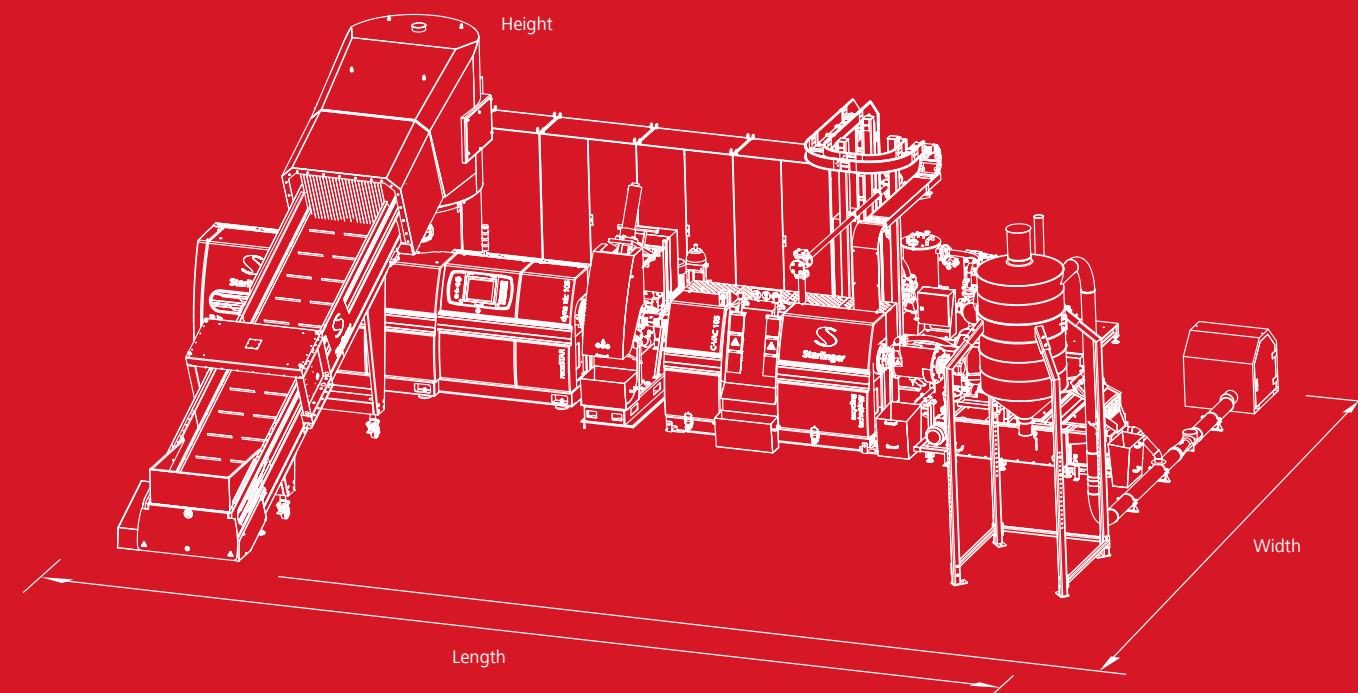
Radiant extruder heat is used for the SMART feeder air-flush, allowing higher moisture content.

Side feed compounding with output feedback loop allows up-cycling through exact dosing straight into the extruder.

User friendly control panel design, LED user elements, automatic start-up and stand-by, one-button start/stop, etc..

Optimally prepared material is continuously fed into the extruder by centrifugal force.

Extruder screw and barrel are wear resistant; optionally ultra wear resistant.

Dimensions in mm / inch							recoSTAR dynamic
Type	65	85	105	125	145	165	215
Height in mm	3850	3850	4100	4100	4100	4100	4800
Height in inches	150	150	160	160	160	160	189
Width in mm	10000	10000	10000	10000	11000	11000	11000
Width in inches	400	400	400	400	440	440	440
Length (with degassing) in mm	8500	9500	10800	14000	16000	17000	19000
Length (with degassing) in inches	340	380	430	550	630	670	750

Technical Data							recoSTAR dynamic
Type	65	85	105	125	145	165	215
Output [kg/h]*	150 – 250	300 – 500	400 – 750	650 – 1000	850 – 1200	1200 – 1600	2000 – 2400
Output [lbs/h]*	330 – 550	660 – 1100	880 – 1650	1430 – 2200	1870 – 2650	2650 – 3530	4400 – 5290
Energy consumption [kWh/kg]	0.2 – 0.35	0.2 – 0.35	0.2 – 0.35	0.2 – 0.35	0.2 – 0.35	0.2 – 0.35	0.2 – 0.35
Energy consumption [kWh/lb.]	0.09 – 0.16	0.09 – 0.16	0.09 – 0.16	0.09 – 0.16	0.09 – 0.16	0.09 – 0.16	0.09 – 0.16
* without degassing							
SMART feeder							
Diameter [mm]	900	1100	1270	1430	1580	1650	2050
Diameter [inch]	35.5	43.5	50	56.5	62.2	65	81
Drive power [kW]	37/45	75/90	132/160	160/200	200/250	200/250	400/500
Extruder							
Screw diameter (L/D) [mm]	65 (24; 40*)	85 (24; 40*)	105 (24; 40*)	125 (24; 40*)	145 (24; 40*)	165 (24; 40*)	215 (24, 40*)
Screw diameter (L/D) [inch]	2.5 (24; 40*)	3.3 (24; 40*)	4.1 (24; 40)	4.9 (24; 40*)	5.7 (24; 40*)	6.5 (24; 40*)	8.5 (24; 40*)
AC drive [kW]	45/55	75/90	110/132	160/200	200/250	315/345	470/530
* with degassing							
Downstream equipment							
Degassing: vacuum, cascade vacuum, high vacuum	○	○	○	○	○	○	○
Water ring pelletiser	●	●	●	●	●	●	●
Strand/automatic strand pelletiser	alternative	alternative	alternative	alternative	alternative	alternative	alternative
Underwater pelletiser	alternative	alternative	alternative	alternative	alternative	alternative	alternative

● standard ○ option

All data depending on design! recoSTAR® is a registered trademark of Starlinger & Co Gesellschaft m.b.H.

RECYCLING LINE recoSTAR dynamic

for post-consumer waste and production scrap, wide range of applications, **inline recycling,** superior functionality with **SMART feeder,** dynamic **automation package** for higher output, **increased energy efficiency**

Starlinger

State-of-the-art recycling technology with extended functionalities such as **SMART feeder** and **dynamic automation package.** Designed for processing film, fibres, thermoplastic in-house production scrap and washed post-consumer waste from materials such as PE, PP, PET, PES, PA, PLA, PS, PPS as well as foamed products. The most efficient solution for **hygroscopic and wet materials.**

The SMART feeder optimally prepares the input material and feeds it into the extruder by centrifugal force. **The dynamic automation package** regulates the ideal operation point. Automatic speed adjustment of rotating disc and positioning of load-controlled intake slider leads to increased output. Higher levels of humidity can be processed.

The wear-resistant extruders are designed and manufactured in-house. The optional degassing extruder purifies the melt from volatile contamination and monomers. Highly printed, very humid or organically contaminated input material requires the C-VAC module, hygroscopic input material the H-VAC module.

Melt filters for continuous removal of solid contaminants are available. The optional backflushing function reduces costs for filter screens and operator intervention. In case of higher contamination, a power backflushing or continuous melt filter is recommended.

The pelletising system is chosen depending on polymer type and preferred pellet shape. In case of automatic strand pelletising, broken strands are automatically inserted into the strand pelletiser without operator interference. Alternatively, manual strand, water ring, or underwater pelletising are available.
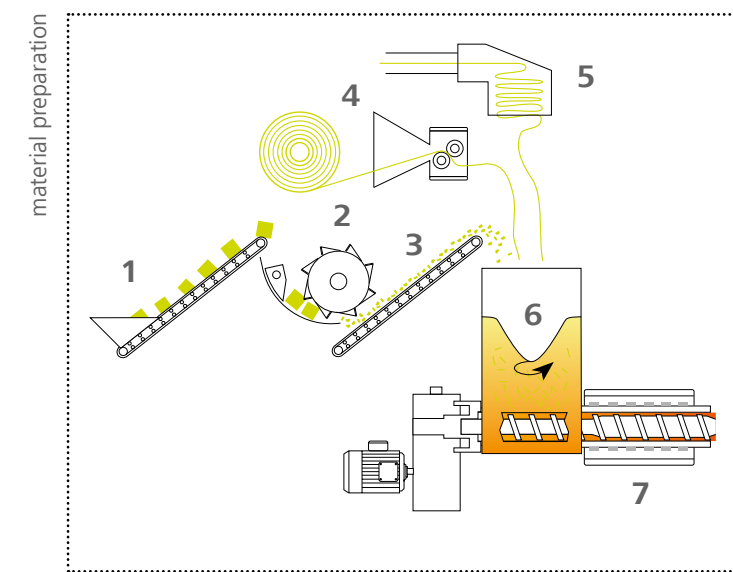
The high pellet quality ensures the production of an end-product with the characteristics of the original product. Up to 100 % reuse is possible. Additives can be added to increase the possibilities of reuse by adjusting pellet characteristics.
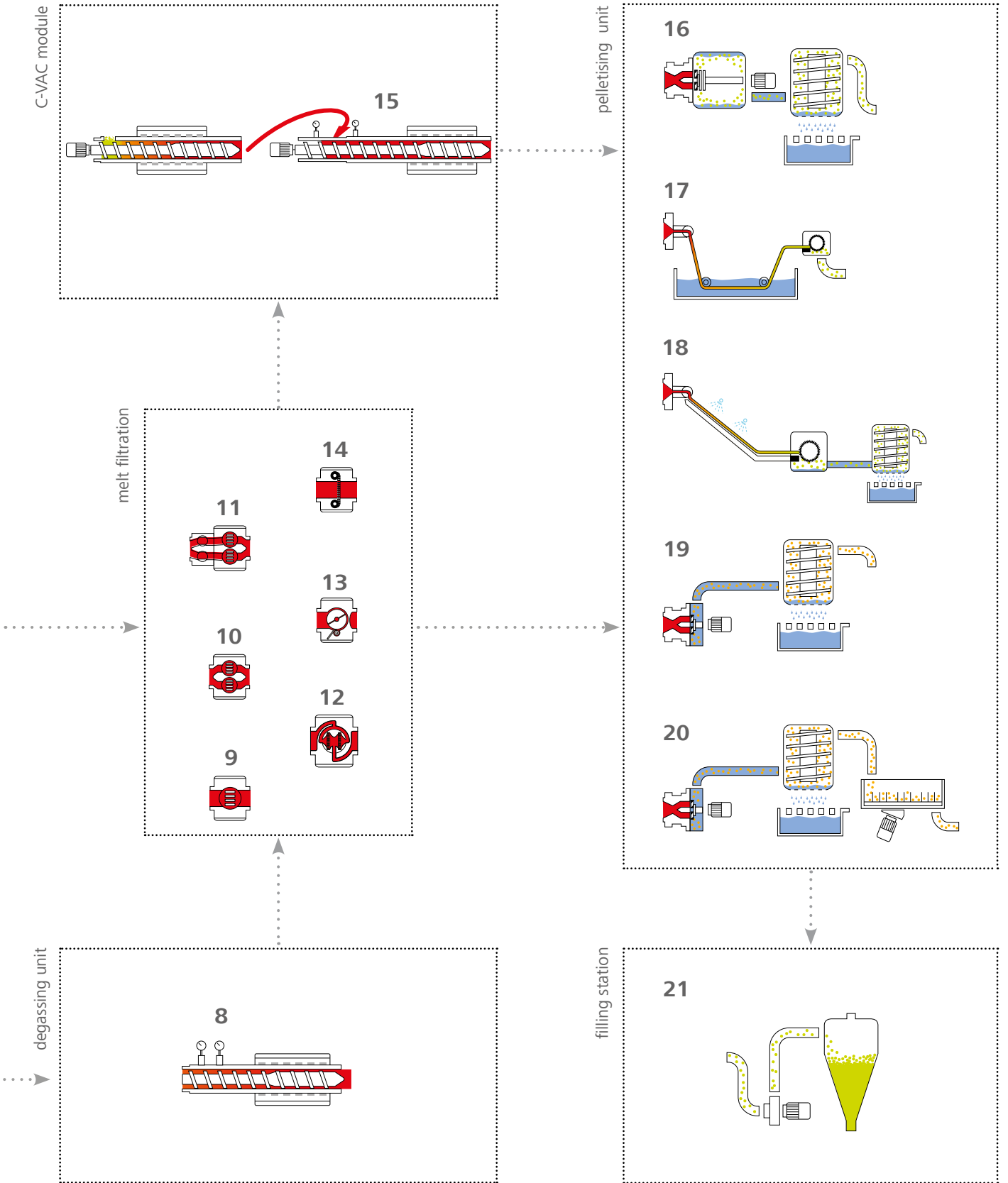
SMART feeder

for ideal material preparation prior to extrusion through performing simultaneously the following:

S shrink & cut
M mix & homogenize
A active feed & control
R rotate & friction
T temperature & dry

recoSTAR dynamic

material preparation

1. Conveyor belt/screw
2. Single-shaft cutter, stand-alone
3. Conveyor belt with metal detector
4. Nip roll feeder
5. Edge trim cyclone
6. SMART feeder
7. Extruder

degassing unit

8. Degassing extruder
9. Melt filtration, discontinuous
10. Melt filter without backflushing
11. Melt filter with backflushing
12. Melt filter with power backflushing

melt filtration

C-VAC module

13. Continuous melt filter
14. Band filter
15. C-VAC degassing extruder with first and second degassing port
16. Water ring pelletiser

pelletising unit

17. Strand pelletiser
18. Automatic strand pelletiser
19. Underwater pelletiser (UWP)
20. UWP with inline crystallisation
21. Filling station

filling station

Machine pictured may include equipment sold as options