

Recycling and Compounding

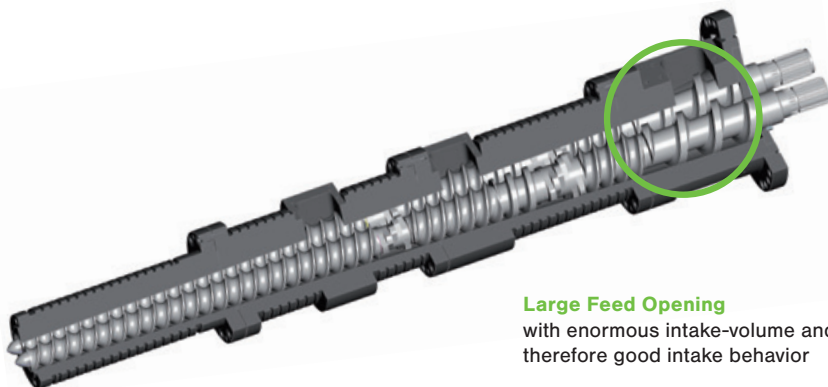
ONE OF A KIND AND HIGHLY EFFICIENT

Since MAS introduced the Cascade Extruder concept in 2010, it has become possible to re-pelletize materials that were generally regarded as difficult to process and de-gas. In this concept, the MAS co-rotating conical twin screw extruder works in conjunction with a single screw cascade extruder to reprocess and de-gas the material. Additionally, this allows the efficient combination of reprocessing of recycled materials with compounding into one step.

A key feature of the conical geometry gives the MAS Extruder an enormous feed opening with a high input volume. The special characteristics of the MAS extruder mean it is ideal for compounding virgin materials, granulates, powders, as well as regrind and materials with low bulk density, such as film flakes in combination with additives and fillers (color Masterbatch, UV stabilizers, CaCo³, Talcum, BaSo⁴, flame retardants, peroxides, etc.) Due to the unique design no side feeders are required to achieve the re-compounding goals.

The MAS Extruder, with its co-rotating, twin-screw design, ensures a smooth melting process and superior homogenization. Gasses and other volatiles trapped within the melt are reliably removed through the MAS venting ports. The CDF filter removes soft contaminants such as wood, paper, non-melted plastics, rubber, aluminium, etc. from the homogenized melt. The melt is ideally prepared for the second degassing at the single screw cascade extruder. This cascade extruder can be equipped with either two or (optional) three venting openings. If required, the system can be equipped with a secondary fine filtration located after the cascade extruder.

All input materials, even film, can be gravimetrically fed into the MAS twin screw extruder. Therefore, it is possible for customers to develop individual recipes that can be stored in the operating system of the extruder and can be retrieved at any time. The tailor-made production of compounds enables the manufacturer to flexibly adjust to market demands and requirements.



Large Feed Opening
with enormous intake-volume and
therefore good intake behavior

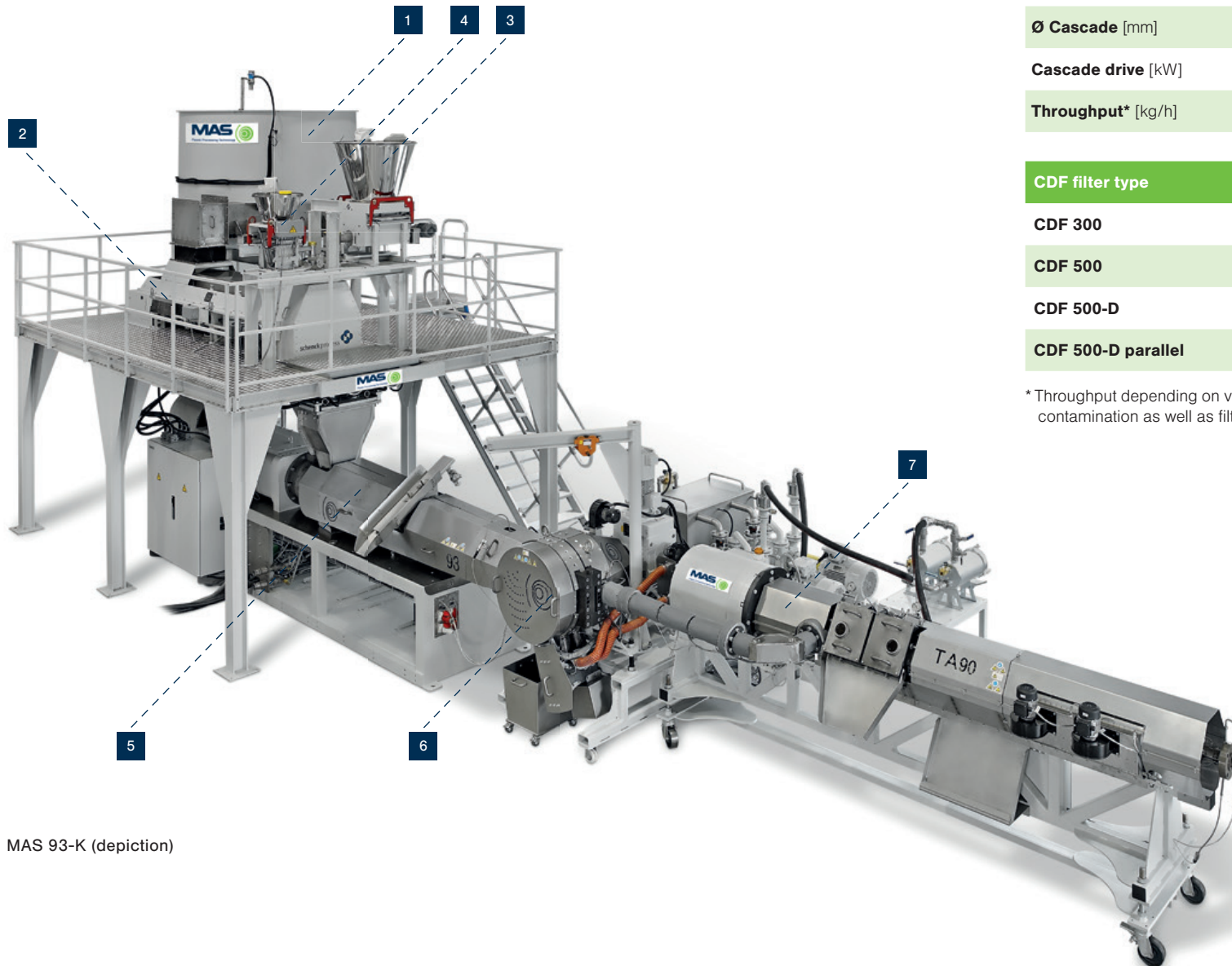
MAS-K STANDS FOR

- due to the large intake volume of the MAS extruder film flakes can be recycled and compounded in one step
- efficient re-pelletizing & compounding in one step
- additives and fillers can be added without side feeders
- qualitative recycling of material that is difficult to de-gas
- gravimetric dosing of all input materials (even film flakes), this allows the use of individual recipes and produce high-quality pellets
- very low specific energy consumption



MAS-CASCADE

Recycling and Compounding in one step



MAS 93-K (depiction)

	MAS 55-K	MAS 75-K	MAS 90-K	MAS 93-K
Extruder drive [kW]	100	200	285/315	345/400
Ø Cascade [mm]	100	140	140/180	180
Cascade drive [kW]	18.5	45	90/110	110/132
Throughput* [kg/h]	400–600	800–1,200	1,000–1,500	1,200–2,500

CDF filter type	Active filtration surface	Throughput*
CDF 300	792 cm ²	up to 700 kg/h
CDF 500	1,640 cm ²	up to 1,600 kg/h
CDF 500-D	3,280 cm ²	up to 2,200 kg/h
CDF 500-D parallel	6,560 cm ²	up to 4,000 kg/h

* Throughput depending on viscosity and properties of the input-material, type and degree of contamination as well as filtration-fineness.

- 1 Film fluff buffer with twin screw auger for materials with low bulk density
- 2 Gravimetric dosing belt for dosing of material with low bulk density
- 3 Gravimetric dosing for fillers (CaCo³/talkum/BaSo⁴, etc.)
- 4 Gravimetric dosing of additives (colour-masterbatch/UV-stabi/peroxide/etc.)
- 5 MAS 93 incl. venting port
- 6 CDF 500-D filtration fineness between 90 µm and 1,000 µm
- 7 Cascade extruder TA 90 incl. two venting ports