The ZSE MAXX series provides maXXimum possibilities and increased user confidence. Compared to previous systems, up to 50% increase of throughput is possible by:

- ↗ ***maXXvolume*** Increased free volume in the screw (OD/ID = 1.66)
- ↗ ***maXXtorque*** Very high available specific torque (up to 15.0 Nm/cm^3)
- ↗ ***maXXshaft*** Very high total torque by new splined shaft design
- ↗ ***maXXcooling*** 30% increased barrel cooling capacity by means of optimized flow liquid coolant through the barrel cooling bores
- ↗ ***maXXvolume & maXXtorque*** - Very large process window

ZSE MAXX	Screw diameter (mm)	OD/ID	Spec. total torque (Nm/cm^3) max.
18	18.5	1.66	11.0
27	28.3	1.66	12.5
35	35.1	1.66	15.0
40	41.4	1.66	15.0
50	51.0	1.66	15.0
60	61.6	1.66	15.0
75	77.0	1.66	15.0
87	89.4	1.66	15.0
110	113.1	1.66	15.0
135	138.7	1.66	15.0
160	159.9	1.66	15.0
180	178.8	1.66	15.0
260	258.0	1.66	15.0

TURBINE *TECHNOLOGY*
Blades for turbines and compressors

PUMP *TECHNOLOGY*
Screw pumps and systems

EXTRUSION *TECHNOLOGY*
Extruders and extrusion lines

PRODUCTION *TECHNOLOGY*
Machine tools, tools, tube technology

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↗ **Leistritz SEA Pte Ltd.** (Singapore)

↗ **Leistritz France Extrusion**

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LEX-10 en 10/19 0,5' fl

EXTRUSION *TECHNOLOGY*

Extruders and extrusion lines

Leistritz Extrusionstechnik GmbH has established itself as one of the leading manufacturers of co-rotating twin screw extruders. For more than 50 years, the company has been building and optimizing twin screw extruders for the plastics industry as well as the pharmaceutical and food industries. Leistritz customers benefit from profound experience: The company plans, designs and produces individual extruders and turnkey extrusion lines for a wide variety of processes and applications.

Example of a ZSE 35 MAXX

Example of a ZSE 50 MAXX

Example of a ZSE 180 MAXX

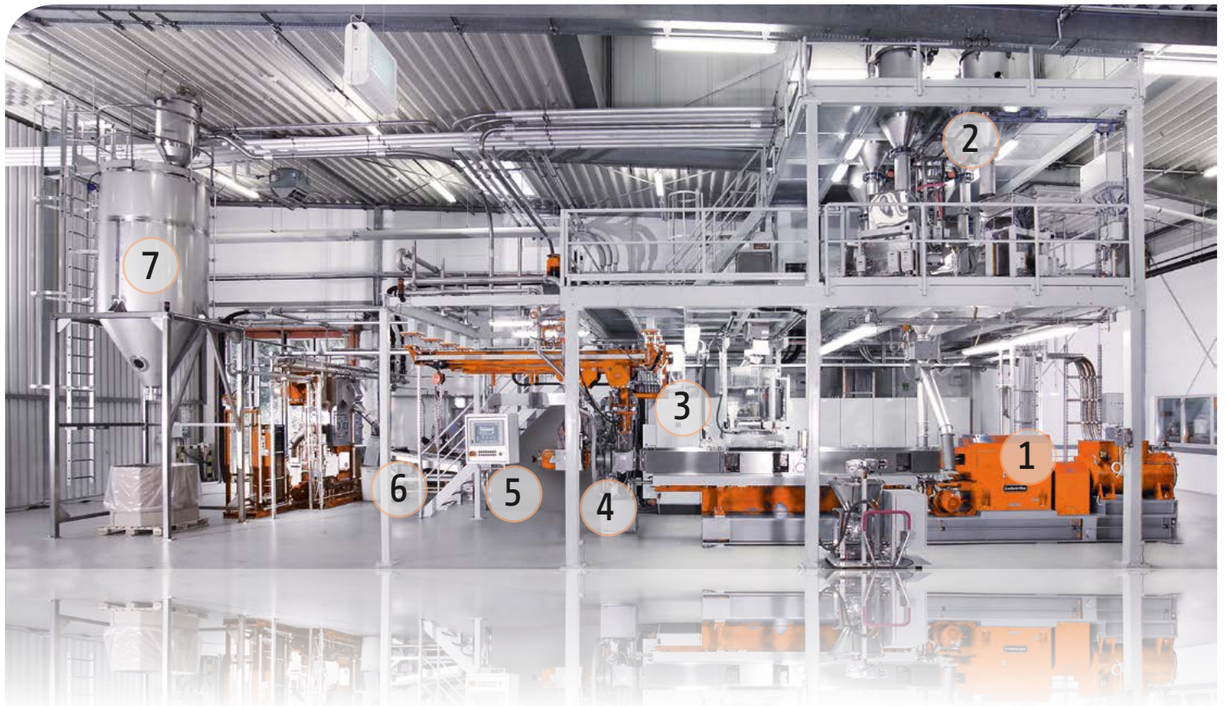
Each unit of a complex extrusion line must interact perfectly. Only this way, the desired end product can emerge from the raw material.

In order to produce products like computer housings, garden furniture, car headlights or ski boots, one needs to have very good machinery that is geared to the respective applications. Here is a short overview:

Masterbatch
Leistritz extruders are used in various masterbatch applications: colouring plastics products, adding certain chemical and physical properties (e.g. UV stabilizers, flame retardants, antistatics) to enhance the end product, or filling the polymer with a high share of e.g. $CaCO_3$. The goal of masterbatch production is the optimum incorporation of pigments/additives/fillers into the polymer matrix. This is done either in a premix or split-feed process.

Compounding
The compounding of thermoplastics is one of the main application areas of Leistritz twin screw extruders. Typical compounding tasks are amongst others the reinforcement of polymers, the enhancement of their dimensional stability, the modification of the impact strength of thermoplastics, the production of polymer blends. The excellent incorporation characteristics of additives, fillers and reinforcing materials in the polymer matrix produce products that are used in numerous areas.

Example of a customized turnkey line



5 Control unit
4 Underwater pelletizer
2 Gravimetric feeder
1 Leistritz extruder
6 Classifying screen with vacuum conveyor
7 Silo
3 Side feeder

Direct extrusion
By combining various process tasks in a single extrusion line, products can be manufactured in a more efficient manner. With direct extrusion the materials have one less heat and shear history which not only has an economic benefit but also often results in improved mechanical and visual properties of the product. The process has particular relevance since the pelletizing step can be left out and the extrusion line is used for compounding as well as shaping the product, e.g. a film extrusion line.

Lab extrusion
Research, development and sample production are the most important fields of operation of a lab extruder. The results that are gained on the flexible Leistritz machines are the key for upscaling to larger production machines. This is facilitated by the modular design of the Leistritz lab extruders which are analogue to larger ZSE MAXX machines.

Pharma and food extrusion
Extrusion technology has become an interesting alternative to common manufacturing processes for pellets, tablets or transdermal systems. The extruder's main task is mixing, homogenizing and sometimes also degassing of pharmaceutical compounds. With its extrusion lines in GMP design Leistritz is leading in this demanding market field. Depending on the final product various extrusion lines can be used.