bella EXTRUDEX

HELIBAR® extruders

Greater efficiency for demanding extrusion processes

QUALITY MADE IN GERMANY
Special machines for your production

Components:

- Grooved intake zone
- Grooved barrel with axial or helical grooves
- Barrier screw with shearing and mixing sections

All EXTRUDEX HELIBAR® extruders are designed in accordance with applicable EU regulations and are delivered with CE marking.

HELIBAR® extruders

Reliable processes, maximum throughput

HELIBAR® technology was developed in-house specifically for hollow-body production and blow molding machine construction. It is based on efficient heat transfer and precise material guidance in the cylinder grooves, which optimizes plasticization in a targeted manner.

Over 1,000 HELIBAR® extruders are already in use worldwide. Leading companies from various industrial sectors rely on this technology to sustainably improve quality, safety, and cost-effectiveness.

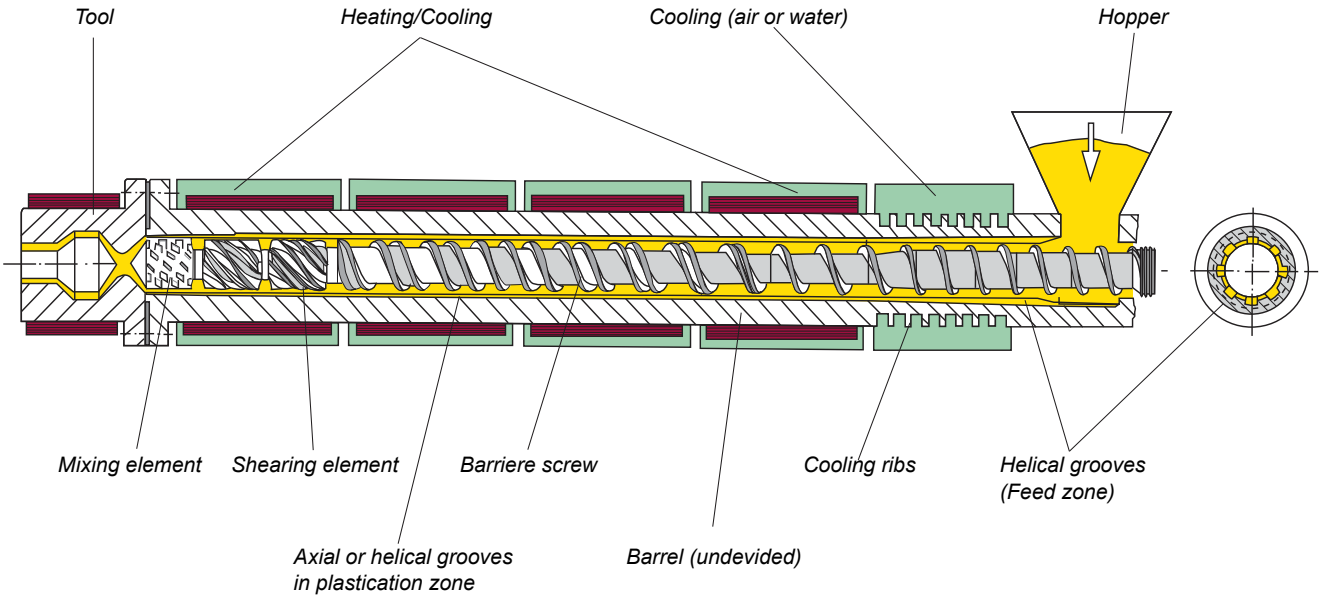
Benefits vs. standard extruders with grooved feeding bush:

- **Reduced cooling losses** in the feed and melting zones
- **Up to 20% energy savings:** in kW/kg of material at the same output
- **Longer service life:** less wear
- **Improved start-up:** reduced starting torque of the screw
- **Greater process reliability:** stable pressure control, even at high back pressures – ideal for multi-layer applications
- **Greater flexibility in material selection:** process-stable processing of ground material content up to 100%
- **Wider range of applications:** suitable for use with virtually all thermoplastics
- **More consistent material feed:** uniform material throughput with minimal variations for reproducible product properties
- **More consistent product quality:** improved control of melt temperature and melt quality
- **More homogeneous melt:** optimized remelting and more intensive mixing in the homogenization zone
- **Gentler material processing:** reduced polymer damage due to short residence times
- **Improved processing of difficult-to-process materials:** e.g. wall-clinging plastics
- **Greater efficiency combined with cost savings:** higher overall efficiency, more cost-effective process unit
- **Less space required:** compact design

HELIBAR® extruders

Schematic diagram

HELIBAR® single-screw extruders with a grooved barrel and a barrier screw featuring shearing and mixing elements:



Retrofit

with HELIBAR® processing units

- Replacement of worn processing units
- Modernization of existing extruders
- Replacement of defective processing units, particularly in blow molding systems

HELIBAR® extruders

Custom extrusion solutions on a modular basis

Our extruders are based on **proven designs** and a **modular platform**. Each machine is designed to meet specific process and application requirements – from standard applications to high-performance processes.

Available size ranges:
Screw diameter: 25–150 mm
Screw length (L/D): 25 / 30 / 36

Modular machine design:
Flexible adaptation of the screw, drive, thermal system, and process engineering – tailored to the material, application, and process conditions.

Performance data depends on the material and is defined on a project-by-project basis.

Typical materials (depending on the application):
PE-HD, PP, ABS, PET, PBT, PC, PA,
as well as other thermoplastics upon request.

Sample configuration HELIBAR® 035:

Type		HB035-30D
Screw diameter	[mm]	35
Screw length	[L/D]	30
Drive power	[kW]	19.2
Heating/Cooling		5/5 zones
Heating capacity	[kW]	10.5

Your project is our motivation.

We look forward to your inquiry!

Pütz Group – a strong association of specialists.
Our network of experts optimizes your production for maximum efficiency.

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HELIBAR® Extruder

Typical axial pressure distribution

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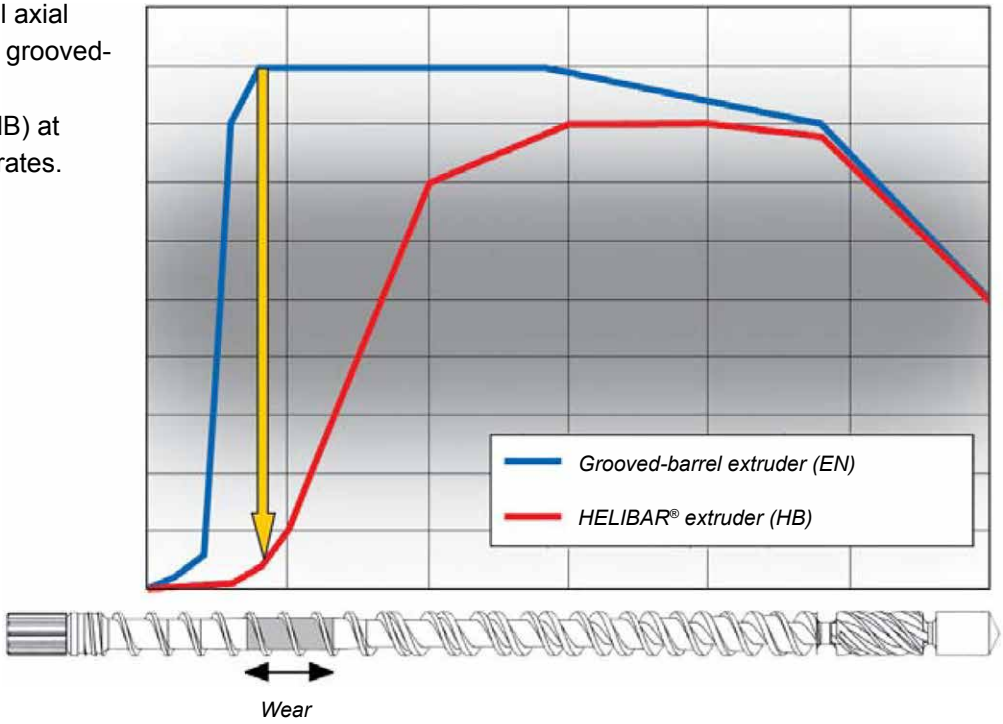
Comparison of the typical axial pressure distribution of a grooved-barrel extruder (EN) and a HELIBAR® extruder (HB) at high specific throughput rates.



Pressure decrease in the feed zone ...

= Reduced frictional losses and torque, particularly start-up torque

= Reduced
- energy losses due to cooling
- wear

= Improved process stability, all-round versatility

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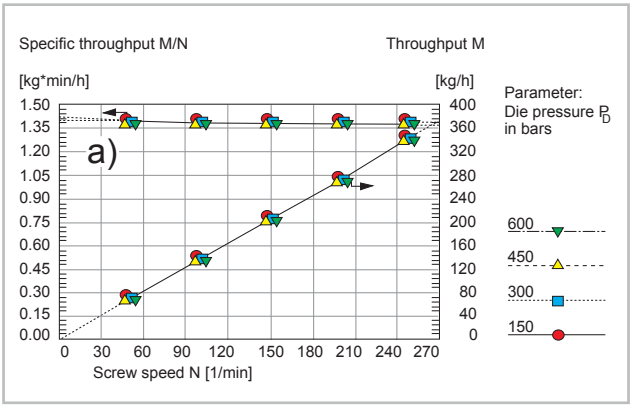
HELIBAR® Extruder

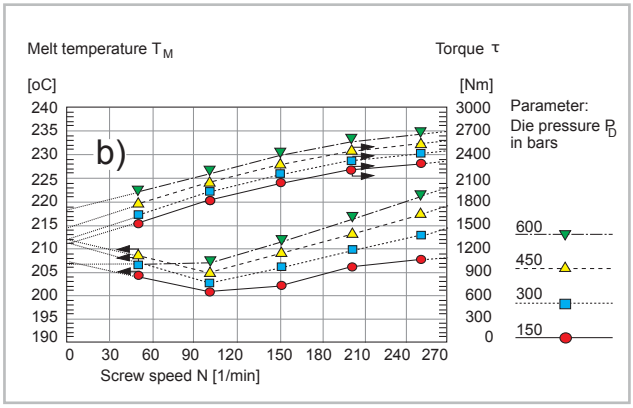
Process Behaviour

Typical behaviour when processing resins with high shear strength,
e.g. HDPE, PP, ABS, PET, PBT, PC, PA, ...

- Extremely stable throughput rate, even at high die pressures
- Throughput is independent of counter-pressure
- High specific throughput
- Low melt temperatures (dependent on RPM and pressure)
- Low specific energy consumption
- Usually no or only weak intake zone cooling necessary

Extruder: HELIBAR® HB050-36D
Resin: HDPE (DOW 35060 E)





Typical process behaviour of HELIBAR® extruders: Important process characteristics as functions of screw speed at various die pressures.

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