



# uniEX

The all-rounder among single screw extruders

battenfeld-cincinnati 



## Customized solutions to meet the most exacting demands

With the new single screw extruder concept, we offer the optimal solution for every demand and application. We have achieved this by using a proven modular system with a simultaneous option of fulfilling our customers' individual wishes and demands with customized product development. The 30 L/D processing unit is perfectly able to meet all requirements.

The uniEX universal extruder series is favorably priced and flexible in application. In particular, it can be used wherever somewhat shorter L/D ratios and lower screw speeds are an advantage in processing. uniEX is the ideal equipment for processors seeking a high-performance extruder in proven battenfeld-cincinnati quality with a wide processing window and application technology support provided by battenfeld-cincinnati. The uniEX series combines all of the benefits, which are decisive for cost-efficient use of the extruder. They are the result of continuous development in engineering and process technology in regular cooperation with raw material producers and customers.

### Your advantages:

- ✓ High flexibility through multiple processing options
- ✓ Various special screw geometries for processing of a great variety of polymers
- ✓ AC motors for low energy consumption
- ✓ Proven battenfeld-cincinnati quality and an excellent price-performance ratio
- ✓ Extremely space-saving
- ✓ Wear-optimized grooved barrel concept

### Our offer:

- ✓ Screw diameters from 35 to 75 mm
- ✓ 30:1 L/D ratio
- ✓ Outputs from 10 kg/h to 500 kg/h
- ✓ Ideally suited for pipes, profiles and cables
- ✓ Also available as co-extruders
- ✓ State-of-the-art technology
- ✓ battenfeld-cincinnati automation with complete range of functions available

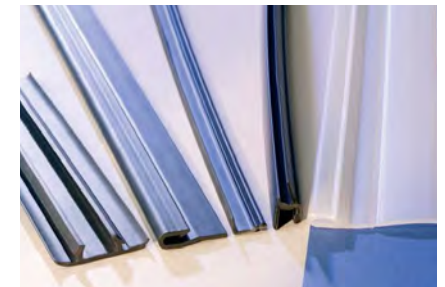
## The single screw extruder for all applications

uniEX single screw extruders are ideally suited for a great variety of outputs and areas of application. The various models can be used not only for pipe extrusion but also for profile and cable extrusion and, thanks to their wide range of outputs and areas of application, they are also ideal for all co-extrusion tasks.

### Pipe extrusion

uniEX extruders are used among others for PE pipe extrusion particularly for applications such as pressure pipes for gas, water and hot water transport, corrugated pipes, telecommunication pipes and irrigation systems. uniEX extruders are also ideally suited for processing engineering plastics such as PA, ABS or PC.

- ✓ PE 100 / PE 80 / PE 63: pressure pipes for gas and water, corrugated pipes and telecommunication pipes
- ✓ PP-R: hot and cold water pipes
- ✓ Soft-PVC: medical tubes, transparent and/or translucent tubes
- ✓ LDPE / LLDPE: irrigation pipes
- ✓ ABS / ABS PC blends: pressure pipes with high impact-resistance, smooth cable conduits
- ✓ PEX: hot water and gas pipes manufactured in Monosil or Sioplas processes
- ✓ PPO: smooth pipes for electrical installations
- ✓ PA: corrugated pipes or co-extrusion for gasoline-resistant PE pipes
- ✓ And many other materials



### Profile extrusion

Depending on the plastic material, uniEX extruders can be used to make profiles of a great variety of types and sizes from polyolefin, soft-PVC, TPE and engineering plastics. Applications include products for:

- ✓ the furniture and building construction industry
- ✓ the automotive industry
- ✓ mechanical engineering and boat construction
- ✓ the electrical industry, etc.
- ✓ packaging profiles, sealing strips, decorative strips, picture frames, etc.



## Technology setting benchmarks

### Machine design

What we demand of our extruders is high functionality, energy-efficiency and perfect design. For us, this means: AC motors as standard and optimized screw geometries. In the design of our extruders, we place special emphasis on clear lines, easy operation, easy maintenance and modest space requirements. Consequently, the motor is placed underneath the feed zone as standard in all uniEX models. This configuration makes the extruder extremely short and slim and reduces its footprint.

The standard extrusion height is 1,100 mm. The control cabinet with a rotatable operating terminal is mounted either on the left or the right side of the extruder, depending on customers' wishes. Special versions with different extrusion heights and/or configuration with a free-standing control cabinet are possible. The uniEX includes machine sizes with 35, 45, 60 and 75 mm screw diameters.

### Motor and drive

From various models with different gear stages, torques and drive capacities, the optimal and most cost-efficient extruder configuration can be selected for each application. The extruders are powered by brushless, maintenance-free, frequency-controlled asynchronous motors with an extremely low sound level.



## L/D-ratio

The L/D ratio of uniEX extruders is 30:1. It consists of a grooved feed zone designed according to the “power feed technology” principle and a bimetallic barrel. The cooled feed zone is thermally insulated from the rest of the barrel. However, the feed zone, which is normally cooled for polyolefines, can also be brought up to a higher temperature by using an external tempering unit. For some technical thermoplastic materials such as PA a temperature-controlled feed zone is of advantage. A reduced start-up torque, high linearity in the speed/output ratio and an excellent behavior under high back pressures can thus also be achieved for these types of materials. A special groove geometry in the feed zone ensures an extremely constant screw fill level over the entire range of nominal speeds for many polymers.

## Barrels

All uniEX single screw extruders come with bimetallic barrels as standard. Bimetallic barrels with a special alloy are used for processing corrosive or abrasive materials.

## Barrel tempering

The special fins of the air cooling system ensure effective heat transfer, which substantially reduces the air flow rate and consequently the sound level. This design also allows for excellent melt temperature control.

## Screw geometries

battenfeld-cincinnati's many years of market presence have led to a great variety of proven screw geometries, comprehensive application experience and consequently a great wealth of expert knowledge. The screws of uniEX extruders are nitrided. In grooved extruders, the screw flight is coated either in the feed zone or over its entire length, depending on the application. The screw flights are coated with a special powder alloy which has been developed in-house. This coating stands out by its extreme toughness and wear-resistance. Special screws are used to process fluoropolymers and corrosive plastic materials.







### Linearity

The screw geometries, combined with the grooved feed zone, ensure optimal linearity, which means that the speed/output ratio is mostly directly proportional over a wide range of back pressures for many polymers. This applies to all grooved 30D models used for pipe, profile and cable extrusion.

### Feed hopper

uniEX extruders are loaded via feed hoppers with sliding valves as standard. The sliding valve simply moves the hopper into the correct position for operation, shut-off or complete emptying of the hopper.

### Gravimetric throughput measuring

For throughput measurement, output regulation and/or the regulation of weight per meter, material loading via a hopper with gravimetric throughput measuring is recommended. In this case, the conventional hopper is replaced by gravimetric hopper scales.

### Flexibility

The drive concept and the great variety of screw geometries are suitable not only for PE 100 extrusion in production-relevant quantities, but of course also for processing PE 80 and PE 63. Decades of experience lie behind the screw design for processing PEX, polymer blends for irrigation, PP-R and engineering polymers such as ABS, PPO or PA. In uniEX machines, this experience is brought to perfection.

## uniEX output rates

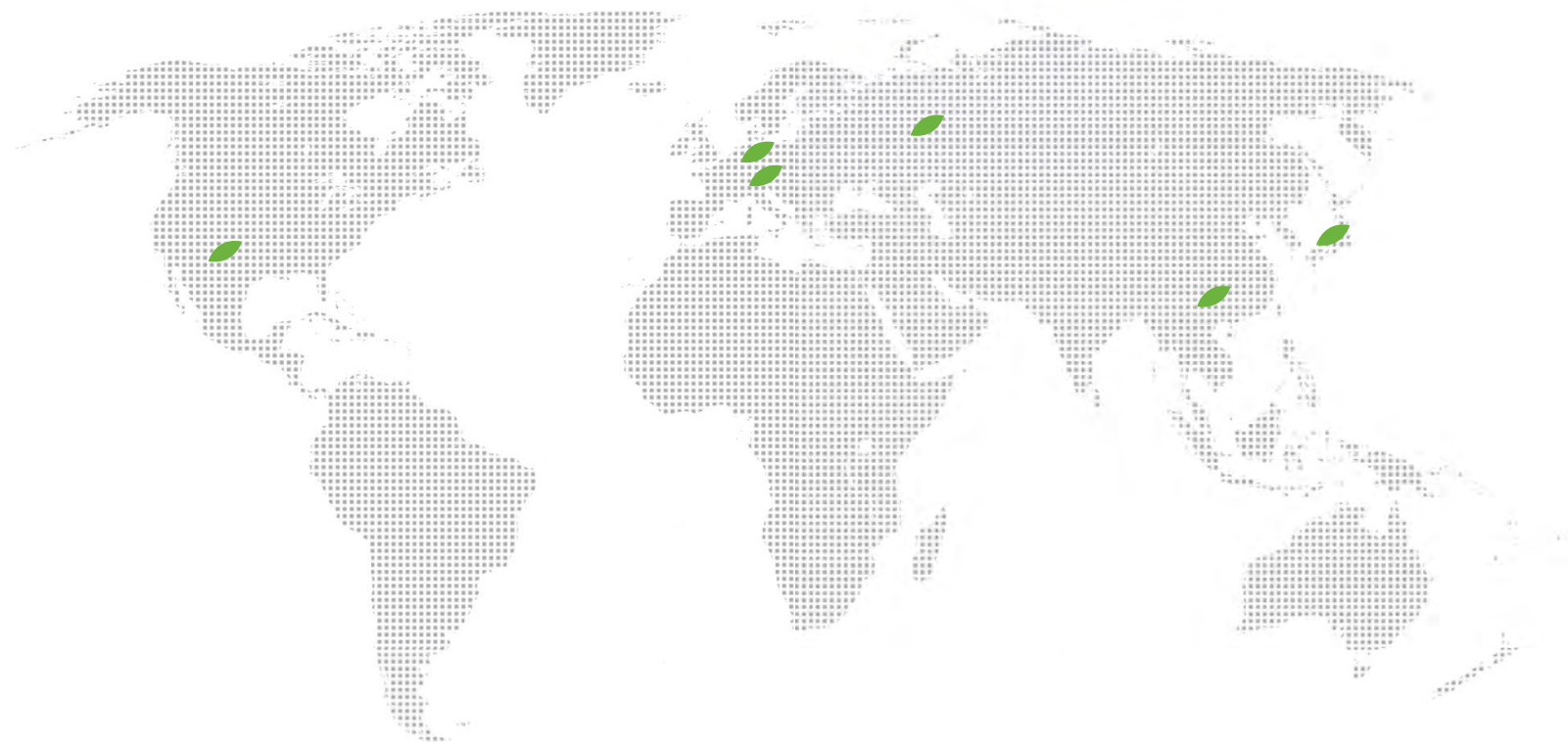
uniEX single screw extruders offer varying output rates for different areas of application. The outputs range from 10 kg/h to 500 kg/h.

Extruder uniEX 30D	35	45	60	75
<b>PE 80, PE 100</b>				
Warranty output kg/h	100	250	350	500
<b>PP-R</b>				
Warranty output kg/h	60	180	280	400
<b>PP-H</b>				
Warranty output kg/h	70	200	300	400

All outputs quoted are warranty outputs. The outputs are based on the battenfeld-cincinnati material reference list.

Pipe extrusion: the outputs specified in the table apply to smooth pipes and may vary, depending on materials processed, upstream and downstream equipment. The output rates for corrugated pipe and spirally wound pipe applications are about 15 % below the values given in the table above, depending on back pressure, raw materials processed and the desired melt temperature..

Profile production: the outputs specified in the table may vary, depending among others on factors such as dies and calibration systems



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