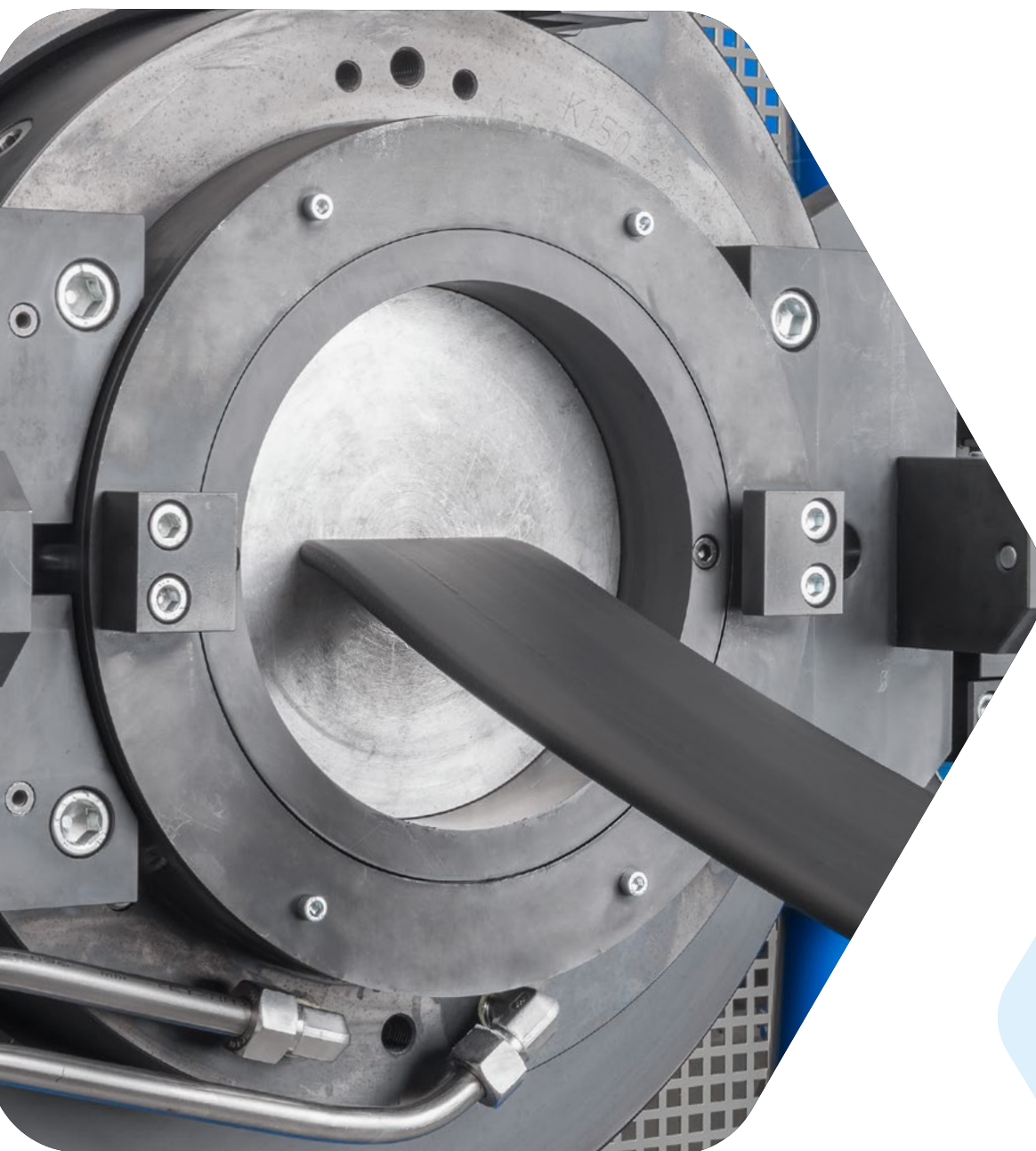


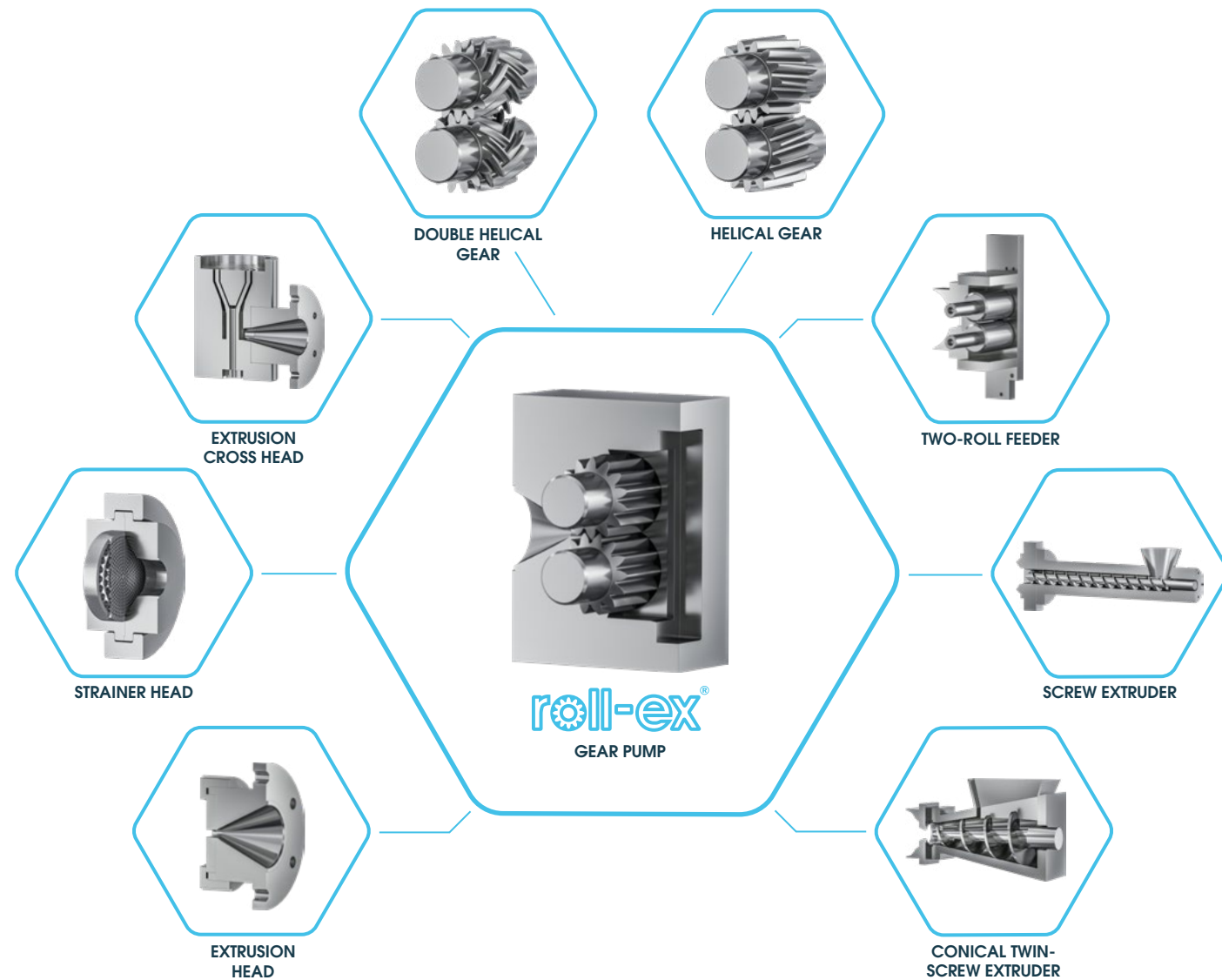


RUBBER PROCESSING

engineering with precision



THE MODULAR SOLUTION FOR RUBBER PROCESSING



RUBBER PROCESSING

Many years of expertise in Fine Mesh Straining and extrusion make us the technology leader for gentle rubber processing of the highest quality and optimal energy efficiency with the **roll-ex**® gear pump.



EXPLORE THE
roll-ex®-SYSTEM

YOUR APPLICATIONS

FINE MESH STRAINING

High-quality rubber products through Fine Mesh Straining

- Within the mixing line
- Offline solutions
- Within the extrusion line
- Within the calender line

PRECISE AND HIGH-PRESSURE EXTRUSION

High process stability and accuracy for extrudates

- Add-on gear pumps
- Preformer
- Co-extrusion lines for yarn, wire, fibre



roll-ex® TWO-ROLL FEEDER

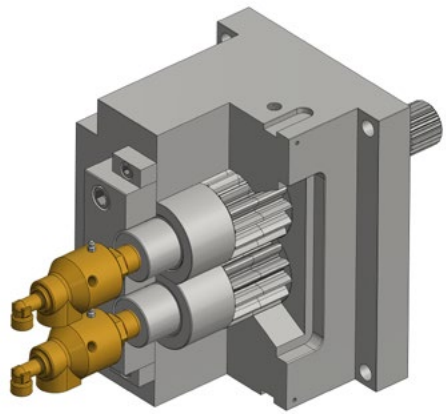


roll-ex® SCREW EXTRUDER



roll-ex® CONICAL TWIN-SCREW EXTRUDER

FINE MESH STRAINING – OUR CORE COMPETENCE



UTH FINE MESH STRAINING SYSTEMS OFFER A WIDE RANGE OF OPTIONS

Ever since UTH GmbH was established in 1985, it has been providing innovative machinery and processing techniques for the rubber industries.

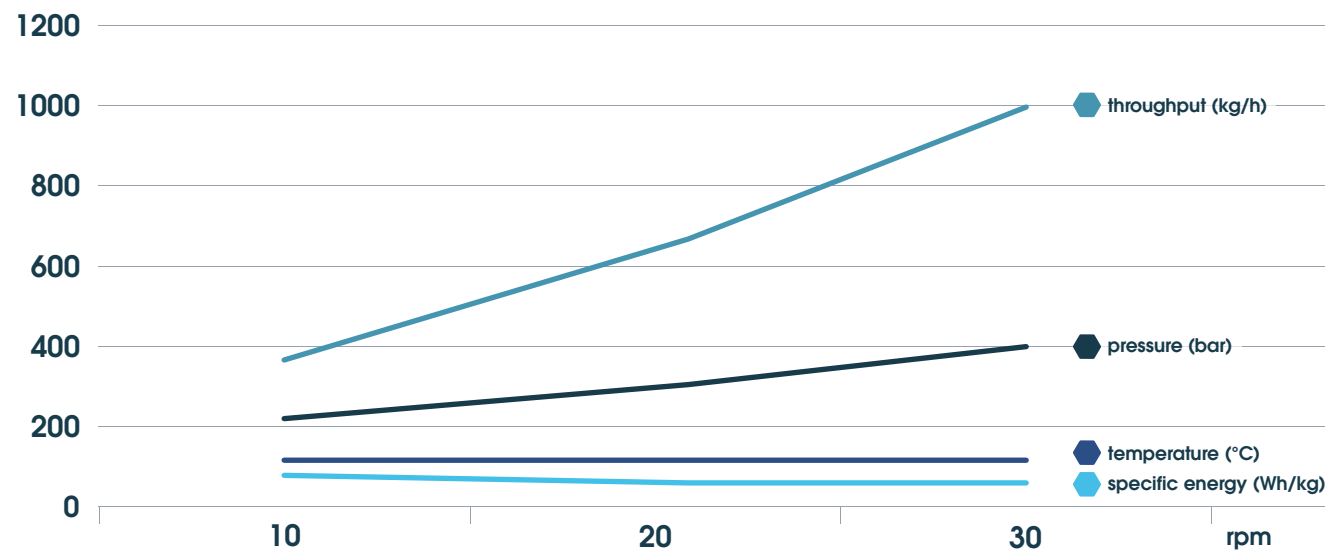
The **roll-ex**® gear pump extrusion system developed in 1995 by UTH has become the global benchmark for Fine Mesh Straining of rubber compounds for waste reduction and compound quality improvement.

UTH GmbH is a leading pioneer in the development and manufacturing of gear pumps and gear extruders for rubber processing.

ROLL-EX® GEAR PUMP TECHNOLOGY

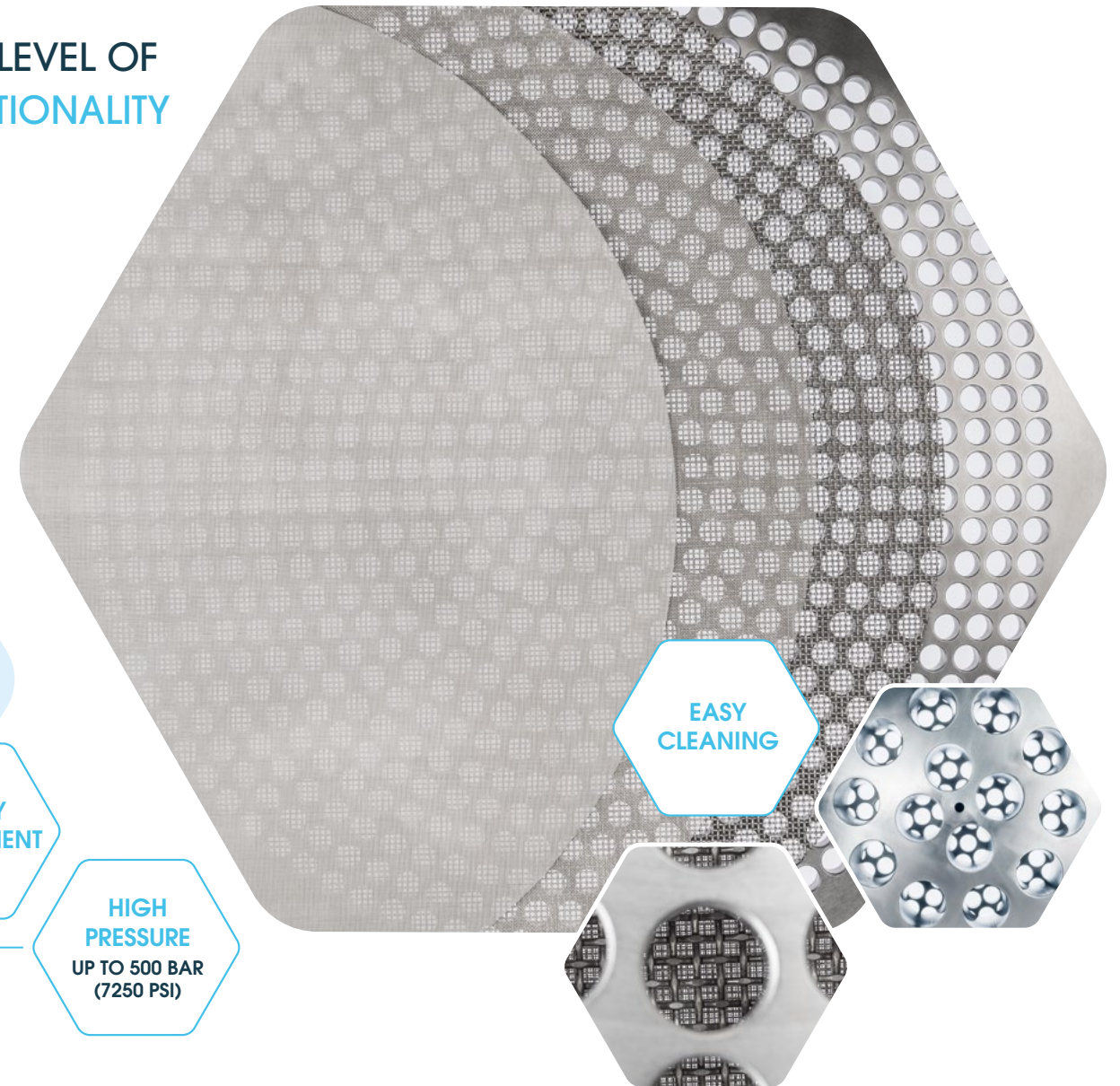
- Patented **roll-ex**® gear pump design with special features
- Optimised for straining applications
- Modular concept for individual straining solutions

TEMPERATURE / PRESSURE CHARACTERISTIC



Typical strainer test on a roll-ex® 120 gear pump using a 120-mesh screen (Ø 300 mm)

HIGH LEVEL OF FUNCTIONALITY



QUALITY IMPROVEMENT

HIGH PRESSURE
UP TO 500 BAR
(7250 PSI)

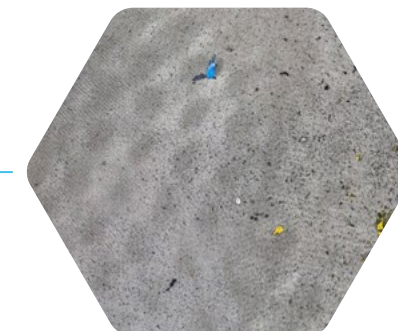
EASY CLEANING

FUNCTIONAL ROLL-EX® SYSTEM:

- High-pressure design
- Quick screen change
- Special solutions for easy cleaning
- Gentle material treatment
- Good temperature control



IMPURITIES IN EPDM
> 100-500 µm

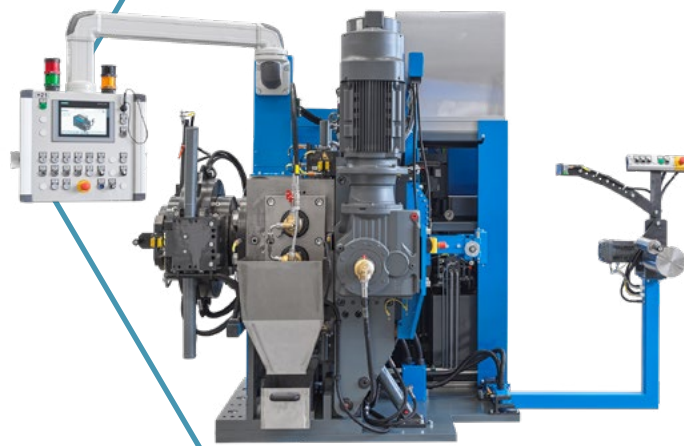


IMPURITIES IN FRONT OF
SIEVE-PACKAGE

FINE MESH STRAINING WITHIN THE MIXING LINE BY THE ROLL-EX® TRF TYPE

THROUGHPUT:

MODEL	(KG/H)	(LB/H)
70 TRF	400	900
120 TRF	1000	2200
150 TRF	1500	3300
220 TRF	2500	5500
300 TRF	3500	7700
600 TRF	6000	13250
1000 TRF	10000	22000



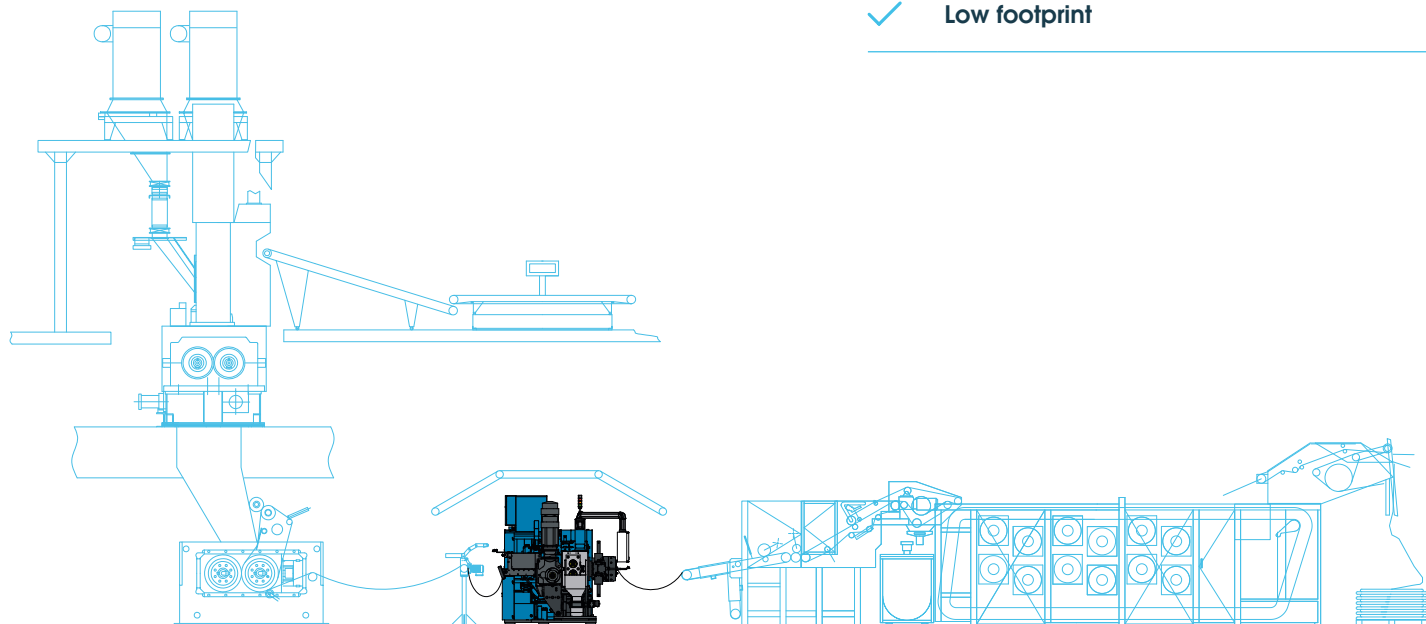
TWO-ROLL
FEEDER

GEAR PUMP

STRAINER
HEAD

PROCESS-TECHNOLOGICAL BENEFITS:

- ✓ Very cost-effective straining of final compounds
- ✓ Minimal dwell time
- ✓ Easy and quick compound changes
- ✓ Low footprint



FINE MESH STRAINING WITHIN THE MIXING LINE BY THE ROLL-EX® DSE TYPE

THROUGHPUT:

MODEL	(KG/H)	(LB/H)
70 DSE	400	900
120 DSE	1000	2200
150 DSE	1500	3300
220 DSE	2500	5500
300 DSE	3500	7700
600 DSE	6000	13250
1000 DSE	10000	22000



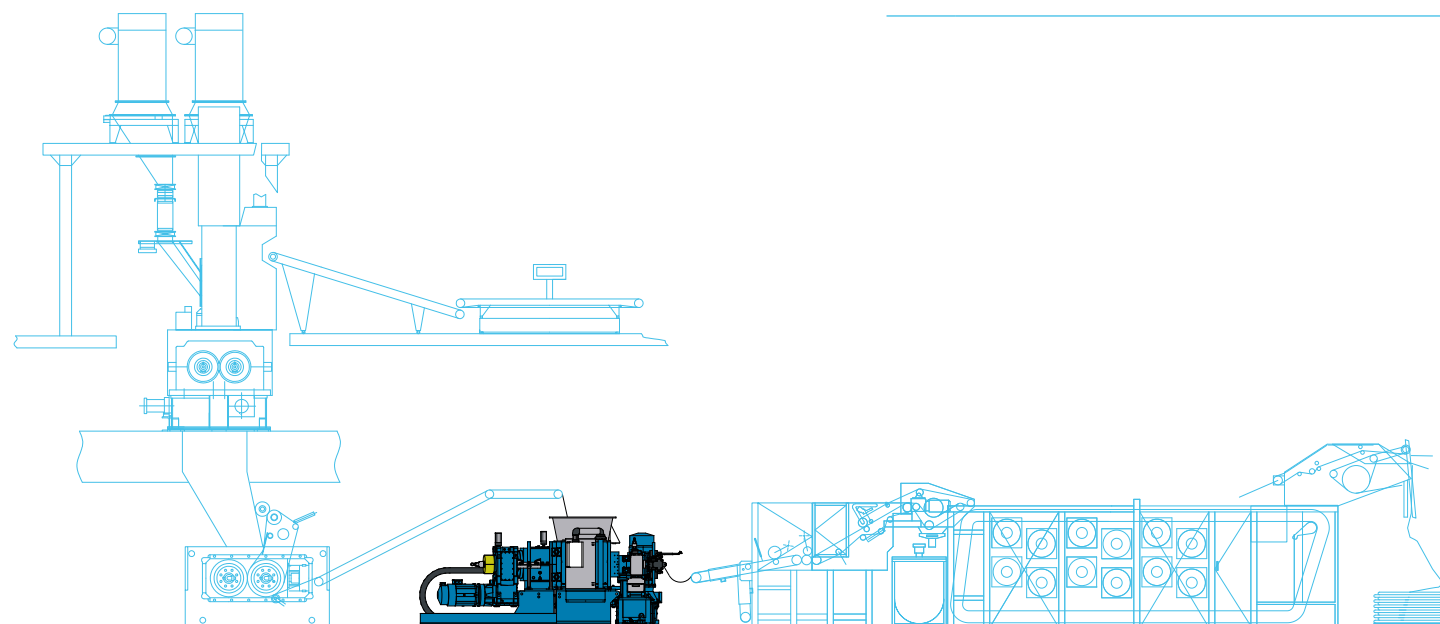
CONICAL
TWIN-SCREW
EXTRUDER

GEAR PUMP

STRAINER
HEAD

PROCESS-TECHNOLOGICAL BENEFITS:

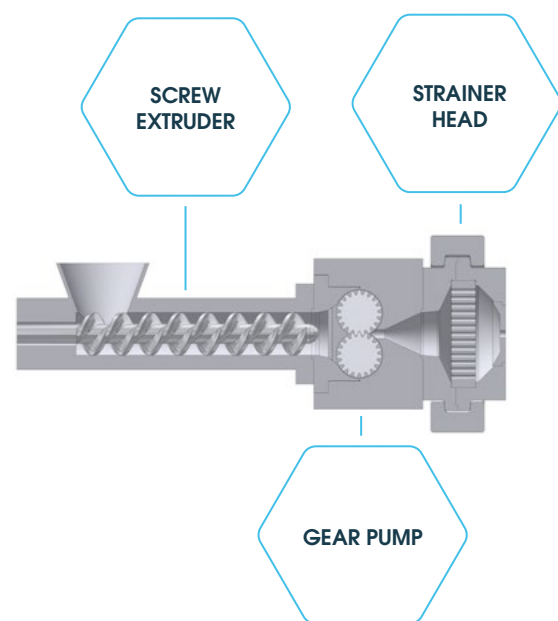
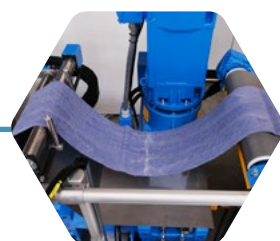
- ✓ Fine Mesh Straining without a buffer mill
- ✓ Easy compound changes
- ✓ High level of automation
- ✓ Buffering for process stability



FINE MESH STRAINING OFFLINE BY THE ROLL-EX® SF TYPE

THROUGHPUT:

MODEL	(KG/H)	(LB/H)
67 SF 45	50	110
67 SF 60	100	220
70 SF 75	250	550
70 SF 90	400	900
120 SF 90	600	1350
120 SF 120	900	2000
120 SF 150	1200	2650
150 SF 150	1500	3300
220 SF 200	2500	5500
300 SF 250	3000	6600

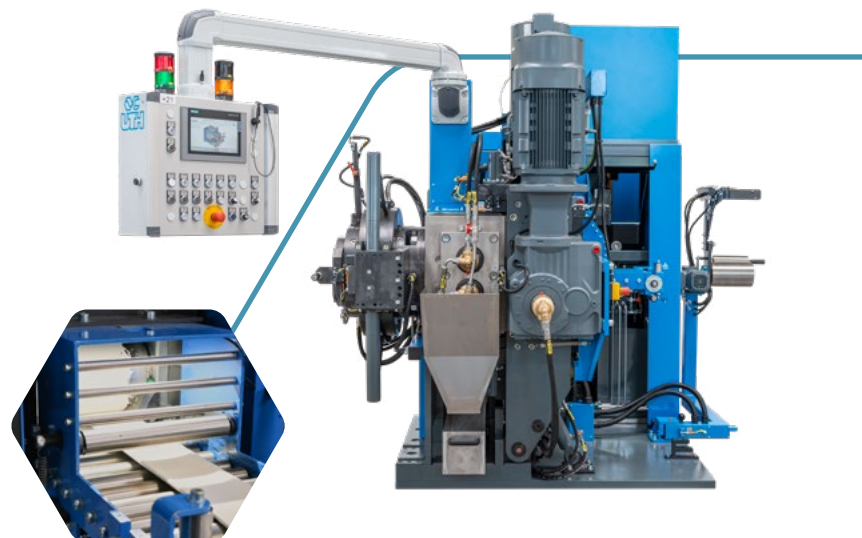


PROCESS-TECHNOLOGICAL BENEFITS:

- ✓ Cold slab feeding for medium- and high-viscosity rubber compounds
- ✓ Batch blending
- ✓ Slab or precise strip creation
- ✓ Stand-alone solution with integrated cooling and automatic compound laydown

FINE MESH STRAINING OFFLINE BY THE ROLL-EX® TRF TYPE

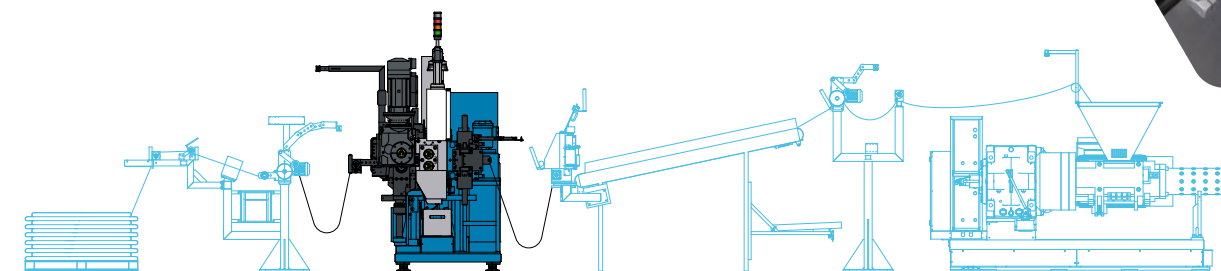
Cold strips of low to medium viscosity compounds can be fed in the TRF type for Fine Mesh Straining.



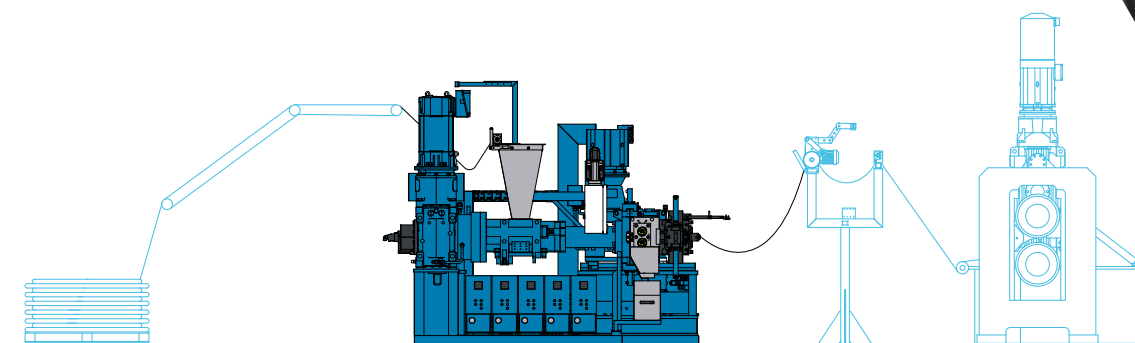
FINE MESH STRAINING IN THE FINAL PROCESS STEP

Fine Mesh Straining immediately before extrusion or calendering ensures the highest material quality. Additionally, a precise and prewarmed feeding strip is produced. The choice of the feeding unit (TRF, SF, DSE) for your process depends on your specific application and rubber compound. The speed of the strainer automatically adapts to the subsequent process steps.

WITHIN THE EXTRUSION LINE BY THE ROLL-EX® TRF TYPE



WITHIN THE CALENDER LINE BY THE ROLL-EX® SF TYPE



UTH MACHINES ARE DESIGNED FOR EASY AND ERGONOMIC CLEANING

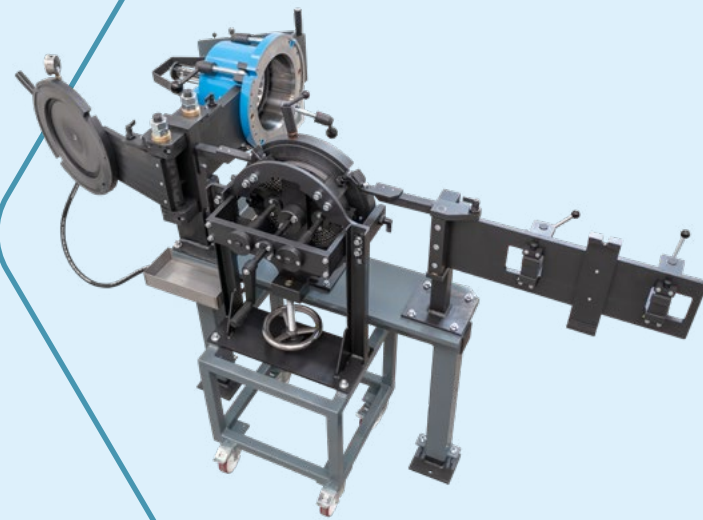
Good accessibility to all product-contact surfaces is achieved by hydraulically operated quick locking and moving systems.

For quick and user-friendly cleaning of the patented two-piece design of the breaker plate and the strainer head, UTH offers a range of dedicated service accessories.

- Die pusher tools
- Breaker plate transport carts
- Breaker plate splitting device
- Cleaning station for breaker plate

Rotors and bearings can be easily dismantled using specially designed tools. An optional hydraulic retractor system further simplifies cleaning of the rotor shafts, bearings and the internal gear pump housing.

The result is maximum serviceability, reduced downtime and reliable operation of the gear pump extruder.



CUSTOMIZED SOLUTIONS THROUGH A VARIETY OF OPTIONS AND ACCESSORIES

To support a wide range of customer-specific process and production concepts, UTH offers a broad portfolio of proven options and accessories.

- Bypass conveyor
- Moving device
- Automatic screen changer
- Second head door
- Tube die
- Cutting device
- Pelletizer / Granulator



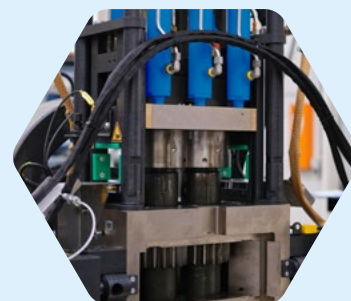
SECOND HEAD DOOR

INDUSTRIAL CONNECTIVITY

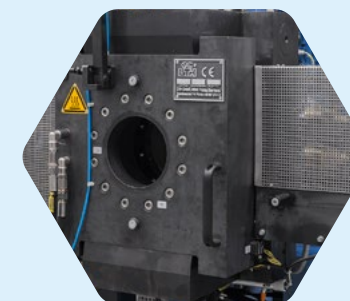
- Data-Lox-Data Logging system / Visugraph V2 for optimal potential analysis, visualisation, process documentation and predictive maintenance
- Process data and recipe management directly connectable to the customer's MMS/MES/ERP-systems



ROLL-EX® GEAR PUMP IN CLEANING MODE



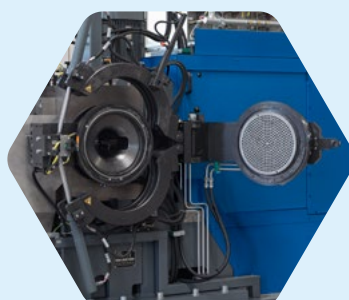
HYDRAULICALLY OPERATED RETRACTOR SYSTEM



AUTOMATIC SCREEN CHANGER



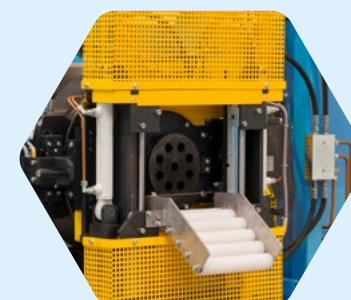
BYPASS CONVEYOR



ROLL-EX® STRAINER HEAD WITH HYDRAULIC QUICK CLAMPING



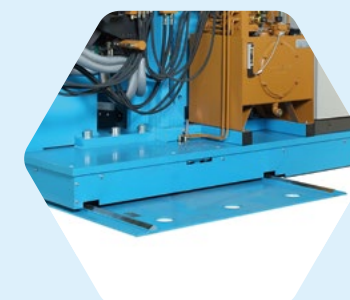
BREAKER PLATE SPLITTING DEVICE



CUTTING DEVICE

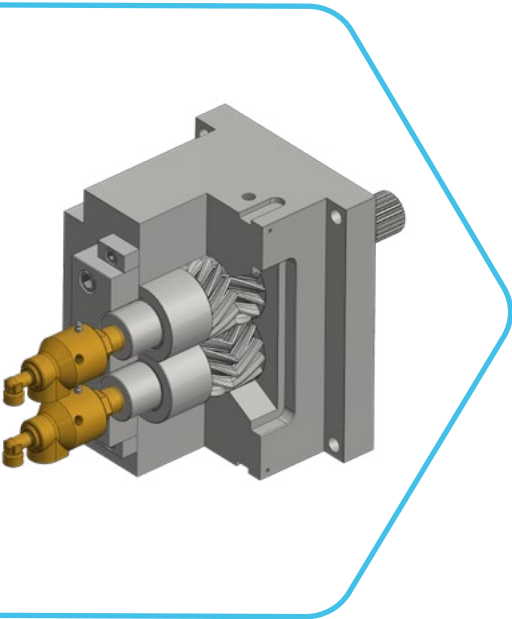


VISUGRAPH ANALYSIS



MOVING DEVICE

PRECISE AND HIGH-PRESSURE
EXTRUSION WITH ROLL-EX®
GEAR PUMP MODELS



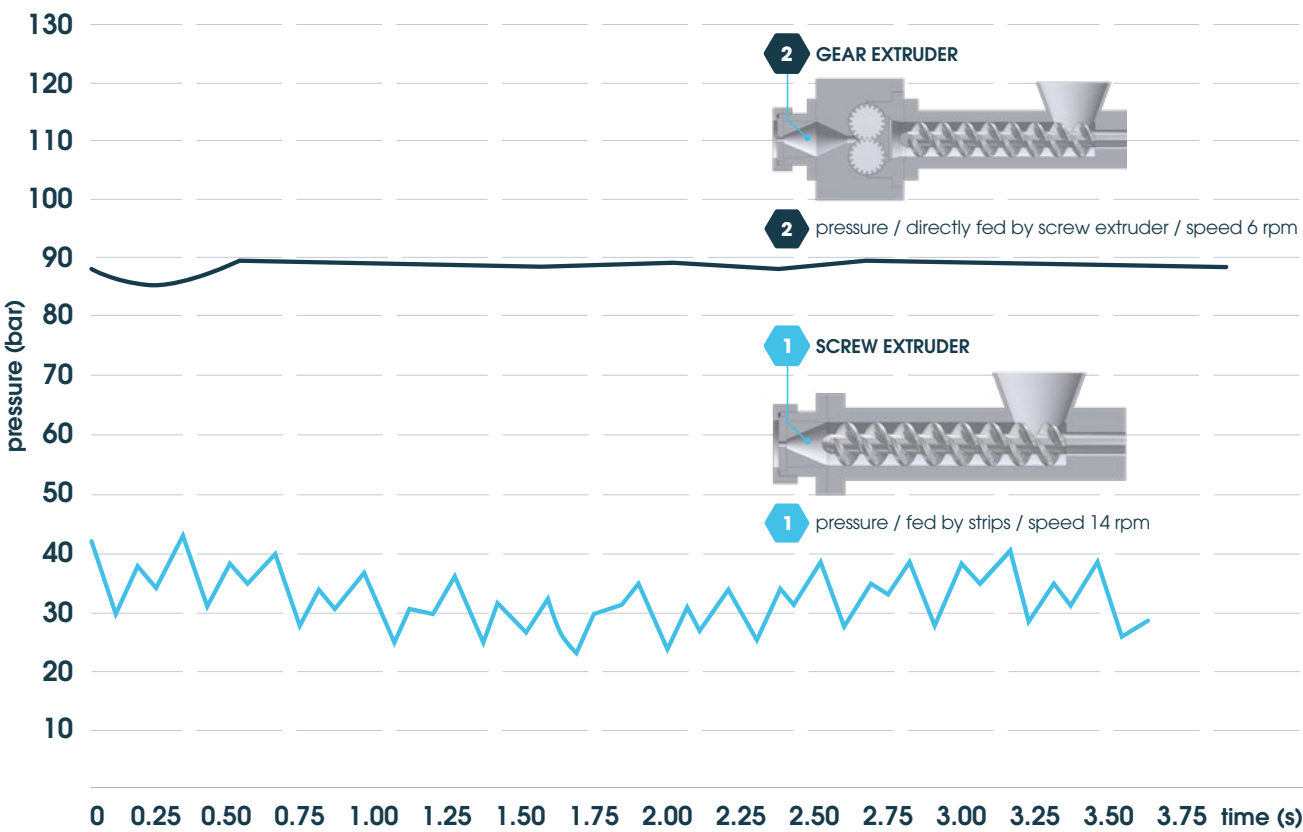
OUR TECHNOLOGY HAS BECOME
THE GLOBAL BENCHMARK AND
PROVIDES INNOVATIVE, INDIVIDUAL
SOLUTIONS

The gear pump is particularly beneficial in applications where high extrusion pressures are required. Due to the strictly volumetric conveying principle of the gear pump, throughput is largely independent of back pressure, ensuring highly stable output pressure and resulting in reduced cross-sectional fluctuations of the extrudate. During the extrusion process, the temperature remains extensively constant.

ROLL-EX® GEAR PUMP
TECHNOLOGY

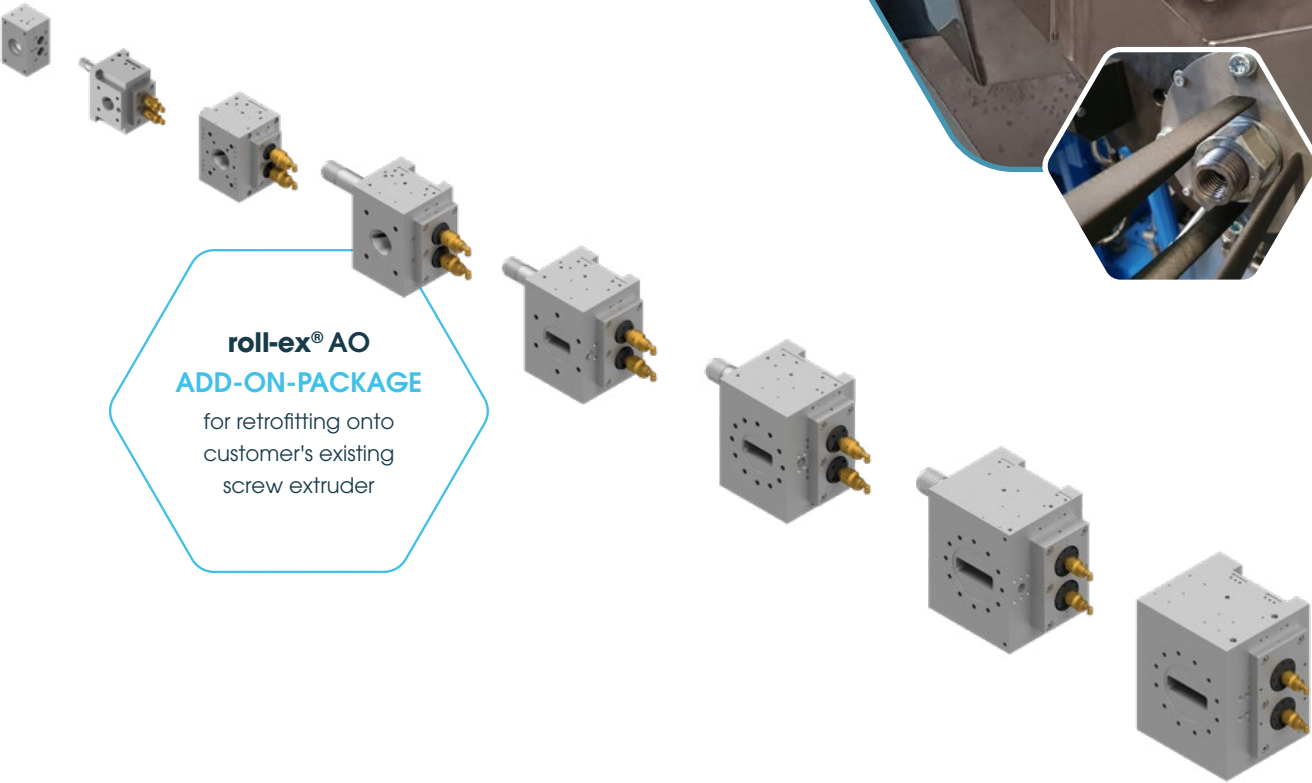
- Patented roll-ex® gear pump design with special features
- Modular concept for individual straining solutions
- Easy and quick to clean
- High pressures up to 500 (800) bar / 7250 (11600) psi
- Low energy consumption

PRESSURE DIAGRAM
SCREW EXTRUDER / GEAR PUMP



EXTRUSION
ADD-ON SOLUTIONS

The **roll-ex®** add-on gear pump can be easily adapted to existing extruders through various connection options for customer-specific machine configurations and throughput requirements. In extrusion processes, gear pumps reduce instabilities and improve process stability.



ROLL-EX® MODELS

MODEL	67/36	72/50	72/70	120	150	220	300	600	1000
Specific throughput cm³ / revolution	54	116	162	536	1099	1766	2430	4500	5980
Working pressure (max.)	bar	800	600	500	500	500	500	500	500
	psi	11600	8700	7250	7250	7250	7250	7250	7250

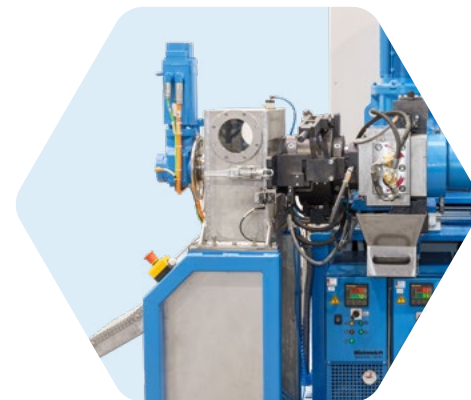
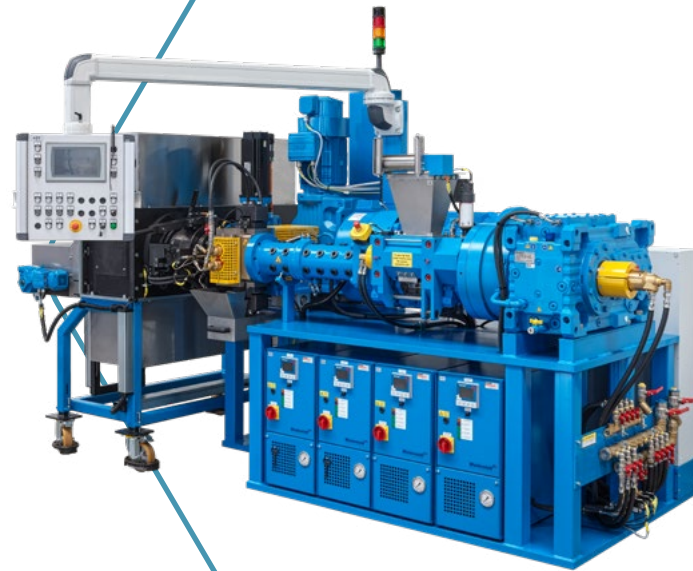
EXTRUSION PREFORMER APPLICATIONS

The **roll-ex®** Preformex combines an extruder, gear pump, straining, and cutting unit into a single integrated solution. This process enables the continuous production of highly precise preforms with exact weight and length tolerances.

Cold rubber compound is fed directly into the extruder. The combination of gentle material handling, the accuracy of the gear pump, and the precise synchronization of the rotating knife ensure outstanding repeatability and highly accurate preform dimensions.

The modular system design allows rapid changeover from preform production to endless profile extrusion, direct mould feeding, or granulation. This flexibility enables manufacturers to adapt efficiently to varying production requirements.

- Precise blank production
- Fine Mesh Straining of compound
- Endless profile extrusion
- Direct mould filling
- Granulation



roll-ex® PREFORMEX
AS INTEGRATED SOLUTION

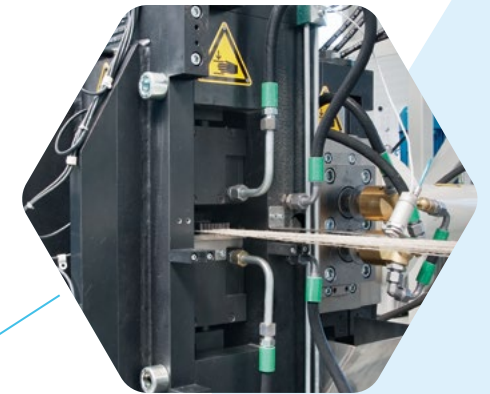
PROCESS-TECHNOLOGICAL BENEFITS:

- ✓ Cold or warm feed for medium- and high-viscosity material
- ✓ Good and efficient, continuous plasticising of compound
- ✓ Cutting unit designed for high accuracy and cutting speeds
- ✓ Controlled temperature increase

EXTRUSION CROSS HEAD APPLICATIONS

UTH supplies complete co-extrusion lines for the production of rubber-coated wires, yarns, and fibre-reinforced components. The patented gear pump design enables extrusion pressures of up to 800 bar (11600 psi), ensuring reliable processing and excellent adhesion in composite extrusion applications.

Depending on customer requirements, the system can be equipped with yarn preheating, unwinding and take-up units, cooling devices, wire tension control, composite cutting systems and automatic winding equipment, providing a fully integrated production solution.



HIGH-PRESSURE YARN
EXTRUSION CROSS HEADS



INDIVIDUAL LINES
FOR SPECIFIC
PRODUCTS



PROCESS-TECHNOLOGICAL BENEFITS:

- ✓ Constant output pressure up to 800 bar / 11600 psi
- ✓ High stability of the extrudate dimensions
- ✓ Low temperature increase, as the screw extruder only generates the feed pressure
- ✓ Easy cleaning of both the extruder and the gear pump

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Fort Mill, SC

UTH GmbH
Head Office, Fulda

UTH Extrusion & Service
Shanghai Co. Ltd.
Shanghai

UTH Japan
Tokyo



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