

PRODUCT CATALOGUE

MODULAR. EXPANDABLE. EFFICIENT. SCALABLE.

COLLIN LAB & PILOT SOLUTIONS

Based in the Bavarian city of Maitenbeth, COLLIN develops laboratory and pilot lines in the modular system for the thermoplastics processing industry, universities as well as research institutes. The owner-managed company was founded 50 years ago and as premium supplier, it sets global technology and quality standards.

As part of the new product lines LAB LINE, TEACH LINE, PILOT LINE, MEDICAL LINE, SERVICE LINE as well as POLYTEST LINE, COLLIN develops individual solutions – platen presses, roll mills, calenders, extruders, compounders, mono- or co-extrusion lines, pressure filter tests, rheometers or optical inspection systems. The scope ranges from small-sized systems for basic development, medical technology and pilot lines to whole production lines.

COLLIN solutions are used for developing and producing plastic products, material investigations and test series as well as pilot tests which allow to scale up to production scale measures.

Material manufacturers, compounders, film producers, companies in the field of medical technology, pharmacy and industry, universities, laboratories and scientific institutions count on COLLIN.

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PLATEN PRESSES

Laboratory platen presses are used in the manufacturing of polymer sheets for optical and physical tests of moulded forms. Depending on the requirements, these machines are also suitable for composites, components or for embossing. The wide variety of products allows COLLIN to deliver the right solution for each application.

Presses E and E+

P 200 E, P 200 E air, P 300 E, P 300 E air, P 400 E, P 500 E, P 200 E+, P 300 E+ und P 400 E+

The Type E series platen presses is the entrance version among COLLIN presses. As a 4-column design with a fixed, upper counter-plate and moveable, lower platen, COLLIN presses cover an enormous range of pressure. The big distance between the columns creates ideal opportunities to act within the interior of the press.

- ▶ Presses P 200 E to P 400 E: single-stage hydraulic with double-acting hydraulic cylinder
- ▶ Exception Press Type Air: the COLLIN pneumatic press for lowest pressure and very high accuracy
- ▶ Press materials: Processing of polymer materials, ceramic materials, composites and further specialities within a temperature range from 20°C to 300°C
- ▶ With the E+ presses, the cooling ramp specified in the Test Standard ASTM D4703-2016 can be met. Moreover, the E+ presses offer more sensitive hydraulics and a more accurate pressure range can be achieved. In addition 10 program steps and a graphic representation of the process.



Presses S and SV

**P 200 S, P 300 S, P 400 S, P 500 S
P 200 SV, P 300 SV, P 400 SV, P 500 SV**

Press Type S particularly convinces with its quiet hydraulic aggregate, which does not run constantly. Moreover, no oil cooler is needed, resulting in a lower consumption of cooling water. Another advantage is the vertically moveable, ergonomic door. Optically, the Press Type S impresses with its futuristic, reduced design.

- ▶ High pressure accuracy +/- 0.5 bar
- ▶ Very high temperature accuracy across the plate surface
- ▶ High-precision regulation of the temperature and pressure ramps
- ▶ Reduced energy consumption of the motor
- ▶ Can be used within a temperature range from 20 to 300°C, optionally up to 450°C
- ▶ User-friendly via touch-screen control
- ▶ Also available with vacuum chamber (Type SV)



ROLL MILLS

With laboratory roll mills, quality and processing features of polymer material can be tested by discontinuously plasticising, mixing or kneading. The roll mills from COLLIN set standards when it comes to accuracy and reliability in processing rubber, ceramic or special materials.

Roll mills E and ER

W 110 E, W 150 E, W 110 ER, W 150 ER

The customers of COLLIN use the laboratory roll mills of the more cost-effective E Entrance series which is used as training machine for examining small quantities, for routine operations or for testing thermoplastics as well as elastomers (ER version).

The roll mills are used for mixing, plasticising, kneading or laminating of plastics and are simple roll mills with manual gap adjustment. This is why the E for Entrance series exists as useful alternative for laboratory and pilot tests.

- ▶ Cost-effective series
- ▶ Perfect machine for routine operations in the laboratory
- ▶ Wide range of application
- ▶ Practical handling due to the design

Roll mills ER

Stronger drives ensure that elastomers can be processed. The gap adjustment is done manually.



Roll mills P and PR

W 110 P, W 150 P, W 150 PR



The P series roll mills feature very high reproducibility and are designed for demanding laboratory tests. In order to mix, plasticise, knead or laminate plastics, the COLLIN test roll mills are equipped with a motor-driven gap adjustment. Optionally, COLLIN also delivers gap measurements and controls. The roll mill can be laid out at high temperatures of up to 450°C.

- ▶ Perfect for more demanding laboratory tests
- ▶ Very good reproducibility plus log data
- ▶ Stand-alone use or as downstream equipment

Roll mills PR

Stronger drives ensure that elastomers can be processed.
Motor-driven gap adjustment.

Roll mills M

W 150 M



M roll mills are essential for all processes in the development and production control.

The setting accuracy for sizes and the large number of integrated measuring instruments allow for a reproducible determination of characteristic material data, which supports the perfect creation of setting parameters for all production machines.

Optionally, gap measurements and regulations as well as layout at high temperatures of up to 450°C are possible.

Stretching Frame Maxi Grip

Stretcher 5-750, Stretcher 7-750, Stretcher 9-750



Stretching frames are used for the biaxial stretching of plastic films. It is particularly worth mentioning that these machines were specifically designed for a film thickness of up to 3.5 mm and stretching at temperatures of up to 400°C.

The touch screen control allows for the programming of many different stretching sequences with heating and cooling cycles, which can additionally be taken into account. This makes it possible to accurately duplicate production processes.

The control system records all machine and process parameters and also automatically provides test reports.



EXTRUDERS

COLLIN has about 50 years of experience in the manufacture of single screw extruders. This expertise is always up to date with the latest technology and influences the ongoing development of the extruders. Particularly in the recent years, COLLIN has developed two extruder lines based on the different needs of the customers – the E and P series.

Extruders E

E 12 E, E 16 E, E 20 E, E 25 E, E 30 E, E 45 E

The Type E series extruder is the entrance version of the COLLIN extruders. Designed for laboratory operations and test runs in R&D, the compact systems are a cost-effective alternative to the Type P Professional series extruder.

The extruder is assembled on a moveable electric cabinet which includes the power electronics, connections and the main switch. The COLLIN E series extruders can especially be used for polyolefins and several technical polymers (without abrasive, corrosive fillers).

- ▶ Useful alternative for laboratory and test runs
- ▶ Different sizes for different requirements
- ▶ Various follow up systems – depending on requirements – are possible
- ▶ Very good handling due to compact design



Extruders P

E 12 P, E 16 P, E 20 P, E 25 P, E 30 P, E 45 P, E 60 P

Powered by an innovative compact gear motor, the Type P series extruders, whose drive electronics and control are directly integrated in the base of the device, can be used in a variety of ways: for R&D or production. Modularity is experienced with the P series extruders. Different kinds of downstream equipment can be connected and numerous additional options as well as features are possible depending on the requirements of the customer.

- ▶ Abundance of options for use and extension
- ▶ Very good handling due to compact design
- ▶ Optimal operation via touch-screen control
- ▶ Ideal for multi-layer lines as the different follow-up systems can be adjusted individually
- ▶ The extruders can nearly be adapted to any extrusion task

COLLIN also offers extruders for the processing of rubber and ceramic which can be built according to specific customer requirements.

The high speed machines of the Type T series extruder (PILOT LINE) combine the advantages of Type P, however, due to the highly increased speed and simultaneously high drive torque, they reach an essentially higher output. Particularly the development of the screw geometry and the feeder for the high speed extruder require enormous technical expertise.



COMPOUNDERS

Compounders are used for continuous plasticising, mixing and dispersing, but also for alloying, degassing and chemical conversion or degradation. In this field, COLLIN provides maximum standards for technology and quality.

Compounders E

ZK 16 E, ZK 25 E

Compounders are used for testing, developing and producing different polymeric materials such as thermoplasts, elastomers, food and for medical & pharmaceutical applications.

The COLLIN Compounder Type E Entrance is perfectly suitable for easy compounding tasks. The free-standing machine can connect different polymers in various ways and is very flexible when it comes to dosing – side feeders, volumetric or gravimetric dosing units.

The compounder also shows flexibility with the downstream equipment, which can range from a water bath or pelletizer to a small blown film line or cast film line.



Technical data

- ▶ Processing length 36, 42 or 48 D
- ▶ Throughput: approx. 0.5 - 15 kg/h
- ▶ Standard sub cabinet on rollers
- ▶ Co-rotating screws and counter-rotating screws possible

Compounders P

ZK 25 P, ZK 35 P

The ergonomic operation and the modular design are characteristic for COLLIN and allow for co-rotating and counter-rotating operation of the compounders. It is possible to flexibly combine cylinders, screws and processing length.

The cylinder segments are located on a slide rail and can be moved, either manually or electrically. Advantages are the fast cleaning processes and the quick material changes.

COLLIN compounders are also available as high-temperature version for processing temperatures up to 500°C.

Torque: up to 300 Nm/screw (ZK 35 P)
Speed: up to 1200 rpm



Blown film dies

Mono-blown film dies and multi-layer blown film dies Type RW 40, RW 80, RW 120, AW Mono

Mono-blown film dies are available with axial or radial spiral mandrel distributor, depending on application and expandability.

Multi-layer dies for 2 up to 13 layers are suitable for many different numbers of layers. For these processes, COLLIN provides dies with radial spiral mandrel distributor and matching mandrels and female dies.

The retrofit between different layers is easy and quick – e.g. from 3 layers to 5 layers.



BLOWN FILM LINES

Blown film lines of COLLIN are used in various ways: Function tests of polymers and compounds, development of multi-layer films, quality control of the color distribution or detection of defects, control of the dispersing behaviour of compounds and extruders as well as the production of small film hoses in the food and medical sector.

Blown film lines E (air-cooled)

BL 400 E

The E Entrance Blown Film Line is the ideal entrance machine for quality control, development of films or function tests of plastics.

Technical description

The unit includes a moveable base frame, on which the components are mounted. The central column with take-off unit, lay flat unit as well as control panel is the main component. The take-off unit is followed by a roller guiding section and a winding system.

Advantages

- ▶ Quick material and colour change
- ▶ Compact line, small footprint
- ▶ Reliable, European quality
- ▶ Cost-efficient, reliable entrance machine

Materials

- ▶ Polyolefins, PA, EVOH, adhesives



Blown film lines P (air-cooled)

BL 400 P, BL 600 P

The unit features a compact design with a small stand space. It is easy to operate and provides precise, repeatable movements and a quick change between products and parameters. Mono or dual-lip cooling rings and a closed loop of the lay-flat width guarantee reliable quality. The laboratory line can be used as continuous quality control via a COLLIN online rheometer or the optical film control COFIS (COLLIN Film Inspection System).

Multi-layer Blown Film Extrusion Line

The modular system of COLLIN allows for the configuration of lines with up to 13 extruders and the corresponding screw diameter. The machines can be equipped with melt pumps or gravimetric dosing to ensure that the necessary wall thickness proportions are observed.



Blown film lines P (water-cooled)

These lines are designed for the production of films. The radial distribution system provides accurate thickness distribution, the vertical extrusion in a water cooling ring guarantees optimal transparency of films.

Several extruders in an elevated position discharge into a multi-layer die. The hose is guided downwards into a water cooling ring. After that, it is laid flat, dried if necessary, positioned or cut and then wound on rolls.

Advantages of the procedure

- ▶ From the production of the hose up to the welding of the bag, the inner surface of the bag remains clean.
- ▶ By shock-cooling, the clearness of the PP compound is reached.
- ▶ A material with even orientation is produced.
- ▶ By selecting suitable materials for the different layers, desired characteristics are optimally adapted to the requirements.

WBL 400 P, WBL 600 P



Flat film dies

BSD 150 to BSD 800 with a width grading of 50 mm

- ▶ Available with flexlip from 100 mm, gap adjustment via differential screw
- ▶ Manually adjustable gap
- ▶ Coat hanger distributor
- ▶ Prepared for co-extrusion
- ▶ Available as high temperature version
- ▶ Die lip heating and side jaw heating optional
- ▶ Multi-distributor optional
- ▶ Dies with small gaps (<math>< 150 \mu\text{m}</math>) on request.



Feedblock

FB 40

- ▶ The flow-optimised feedblock represents excellent layer thickness distribution
- ▶ Up to 13 layers possible
- ▶ Extremely compact design and shape
- ▶ Very short purging times allow for quick material changes



FLAT FILM LINES

The COLLIN lines include a variety of options for smoothing, embossing and laminating and are particularly used for the production of films or sheets.

Flat film lines with two rolls

CR 144/144-200 XS, CR 144/144-200, CR 144/144-400, CR 250/250-400, CR 250/250-600



This basic unit includes two rolls in horizontal position, suitable for cast films. COLLIN designs the rolls according to the customer requirements such as for example speed, roll width, roll coating etc. Downstream equipment can also be implemented flexibly – depending on the requirements, different types of take-off rolls, edge cuttings, measuring instruments or unwinders and winders.

Flat film lines with three rolls

CR 72/144/72-200, CR 72/144/72-200 Air, CR 72/144/72-400, CR 72/144/72-400 Air, CR 72/144/144-200, CR 72/144/144-400



These versions combine finishing calender and the chill roll and are used for the production of thin-walled or heavy-wall films. The 3-roll unit can be used for vertical or horizontal operation. The forces in the polishing gap can be created in a hydraulic or pneumatic way. The polishing roll is suitable for a wide range of applications such as smoothing, embossing or laminating.

The roll unit is suitable for 2 working positions:

- ▶ Vertical for the application as calender (horizontal die position)
- ▶ Horizontal for the application as chill roll (vertical die position)

Advantages

- ▶ Rolls optimized for liquid tempering
- ▶ Web speed steplessly controllable: 1 - 50 m/min
- ▶ Diverse accessories such as for example camera inspection etc. are possible
- ▶ Quick sample production
- ▶ Easily traversable
- ▶ Flexible and modular design
- ▶ Operable by one person
- ▶ High speeds are possible
- ▶ Different material layers
- ▶ High degree of automation
- ▶ Upscaling to production lines

CALENDERS

Calenders are normally used for the continuous production of semi-finished, thermoplastic films or the continuous finishing of different films and surfaces. An extremely variable, modular system allows for adapting calender units to a wide range of requirements. With 2-roll or 3-roll calenders, many different configurations can be achieved.

Calenders CL

**CL 144/144/144-400 E, CL 144/144/144-600 E, CL 168/168/168-400 P,
CL 168/168/168-600 P, CL 168/250/250-400 P, CL 168/250/250-600 P**

Laboratory calenders help in developing continuous processes. They are suitable for the production of films and sheets with different kinds of layer thickness made from different polymer materials such as PVC, polyolefins, PU, etc. The COLLIN calenders are available with roll diameters of 144 mm, 250 mm or bigger. Special products adapted to process conditions are the standard for COLLIN.

2-roll and 3-roll calenders for high precision films

For the production of films with extremely low wall thickness tolerance. The gaps between the rolls can be measured or controlled with lowest tolerance and high measuring accuracy.

Laminating calender

COLLIN calenders are used in the finishing of films and sheets by lamination or contact lamination. Complete lines can be laid out:

Take-off – Pre-treatment – Pre-heating – Calendering – Finishing – Laminating – Cooling – Cutting – Winding

Finishing calender

The finishing calender is used for smoothing thick-walled films or sheets, or for embossing, coating and laminating. A swivelling and height adjustable group of three rolls allows for adjustment to all usual processing techniques. Apart from heating with hot water or oil, electrical roll heating up to 450°C is also possible.



Multifunctional coating lines

MF 400/144/126-400, MF 400/144/126-600

Multifunctional coating lines are used in the packaging sector, helping to produce Multi-polymer composites with carrier materials such as paper, textile, fleece or aluminium. The system allows for integrating different additional devices, e.g. corona pretreatment, application of glue, IR-oven or further unwinders.

Custom-made solutions can be delivered for the following applications:

- ▶ Flat film extrusion
- ▶ Smoothing – Embossing
- ▶ Extrusion coating
- ▶ Laminating



Stretching lines MDO

**MDO single 400, MDO single 600,
MDO dual 400, MDO dual 600**



The stretching of polymer films improves their characteristics in a variety of ways. COLLIN offers laboratory and pilot lines for stretching films for a wide range of thermoplastic materials and compounds. COLLIN stretching lines consist of an extrusion group, the stretching unit, take-off and winder. These lines are used for quality control and the development of new products and processes. They can also be used in the production of narrow films.

The machines also show high variability by the option of one or two stretching gaps. The film can easily and manually be pulled in due to the compact design.

Winders

**W 400 E central, W 600 E central, W 400 E contact,
W 600 E contact, W 400 E gap, W 600 E gap**



COLLIN Winders are available in many different designs, and all winders are designed for the respective web speed. Our LAB LINE winders are designed for a winding width of up to 600 mm.

1. Simple central winder
2. Winder centrally powered by a lay-on roller
3. Winder with a contact slide: There are three options of winding with this winder unit – central winding, contact winding with adjustable pressure and gap winders with an adjustable gap (0 - 30 mm)

Filament winders



COLLIN filament winders are especially suitable for strands or small hoses with diameters of 0.5 up to 4 mm. The winder has a modular design and is thus freely configurable.

Water baths

WB 1000, WB 1500, WB 2000, WB 3000

Water baths are available with standard lengths of 1000 mm, 1500 mm, 2000 mm and 3000 mm as well as with individual length on demand.



STRAND LINES

The COLLIN pelletizers are responsible for the optimal cutting process during the production of different pellet geometries. The machines feature a huge control range for the take-off speed and the fine adjustment option of the cutting distance.

Strand pelletizers

SP 1, SP 2, SP max, UWP, AP

- SP 1: The basic system has a drive for a pre-defined pellet length of about 3 mm.
- SP 2: Two independent, variable drives allow for infinitely setting the pellet length from 0.8 to 5 mm.
- SP max: These winders are laid out for higher take-off speeds and more than two strands.

Optionally, COLLIN also offers underwater pelletizing.

Underwater pelletizing systems

With this system, the polymer is directly cut at the die plate under water. With the water, the pellets are transported into the drying system in which the water is separated from the pellets. The water system is tempered in order to allow a constant process. The system includes die plate, cutting device and tempered water system. As option, COLLIN offers a polymer diverter valve. The complete unit is mounted on a moveable frame and can easily be connected to the extruder with a C-clamp. The die plate can be delivered with different die designs and heatings.

Characteristics

- ▶ Wide range of viscosity can be pelletized
- ▶ Less dust
- ▶ Micropellets are possible
- ▶ Low noise level



Die face pelletizer air-cooled

With this system, the polymer is directly cut at the outlet of the die plate. Compared with the underwater pelletizing system, here, COLLIN uses a blower for generating an airstream for transporting the pellets into a cyclone. The system includes die plate, cutting device and cyclone. The complete unit is mounted on a moveable frame and can easily be connected to the extruder with a C-clamp.

Characteristics

- ▶ Compact system
- ▶ Low operating pressure
- ▶ Easy and quick cleaning
- ▶ Visibility of the cutting procedure - transparent pane

Mono- & Multi-filament lines

MF 1000

Mono-filament lines - 3D filament lines / strand lines

According to the respective customer requirement, COLLIN 3D filament and strand lines can flexibly be arranged with different machine elements. With these lines, customers produce filaments made of different materials, for example for the further processing in the 3D print procedure.

Applications

- ▶ FDM Fused Deposition Modeling
- ▶ FFF Fused Filament Fabrication

In this additive manufacturing process, where a workpiece in layers with meltable plastic or melted metal is produced, COLLIN filaments can be used. Moreover, this process is suitable for the production of round or flat strands as well as filaments.



Advantages

- ▶ Flexible material usage
- ▶ Flexible strand shape
- ▶ Highest precision regarding roundness
- ▶ Constant diameter
- ▶ Low space requirement
- ▶ Flexibly applicable, also for coextrusion
- ▶ High-precision diameter of the strands
- ▶ Short purging times and material changes



Multi-filament lines

The COLLIN multi-filament line is an ideal system for testing and developing multi-filament fibres. The performance of this compact, modular line is designed in such a way that it is perfectly suitable for pilot production as well as for production runs.

Thanks to very short cleaning cycles, also in case of frequent material changes, the system is extremely economical. The swivelling safety cover guarantees a high safety level for the operator and furthermore, the noise level is reduced. High-performance machine components, which can also be found in production machines, enable the transfer of the results to production lines.

Advantages

- ▶ Compact, modular line
- ▶ Short cleaning cycles
- ▶ Economic line
- ▶ Upscaling

Application

- ▶ Product development
- ▶ Tests
- ▶ Pilot production
- ▶ Product runs



PILOT LINE lines are used for pilot tests and upscaling but also for the production of special products.

High-performance extruders T

E 25 T, E 30 T

The high-speed machines of the Type T series extruder unite the advantages of Type P, however, due to the strongly increased speed at a high drive torque, the output is essentially higher. Especially the development of the screw geometry and the feeder for the high-speed machine required enormous technical competence.



The T series Extruder is driven by a torque motor.

Max. temperature: 500°C

Application: Production

Advantages

- ▶ Drive concept torque - up to 800 U/min
- ▶ Variety of application and extension possibilities
- ▶ Good handling due to compact design
- ▶ Optimal operation via touch screen
- ▶ Ideal for multi-layer lines, since different downstream equipment can individually be adapted

Blown film dies and cooling rings

RW 80, RW 120, RW 160

Blown film dies

Multi-layer dies for 2 up to 13 layers are suitable for many different numbers of layers. For these processes, COLLIN provides dies with radial spiral mandrel distributors and matching mandrels and female dies.

- ▶ Optimised distribution design provides highest layer thickness constancy across the circumference.
- ▶ IBC (inner bubble cooling) is optionally possible.
- ▶ Fully linear, constant bubble volume control (LBVC), allowing for big diameter variability as well as high-precision regulation of the bubble volume control.
- ▶ Easy retrofit between different layers – e.g. from 3 layers to 5 layers.
- ▶ Very good thermal decoupling of the layers



Cooling rings

COLLIN cooling rings have the following special features:

- ▶ Very good flow distribution
- ▶ Compact design
- ▶ Modular and exchangeable inserts

Blown film lines P (air-cooled)

BL 600 P, BL 800 P, BL 1000 P

Blown film lines of COLLIN are used in various ways: Production of multi-layer films as well as the production of film hoses in the food and medical sector.

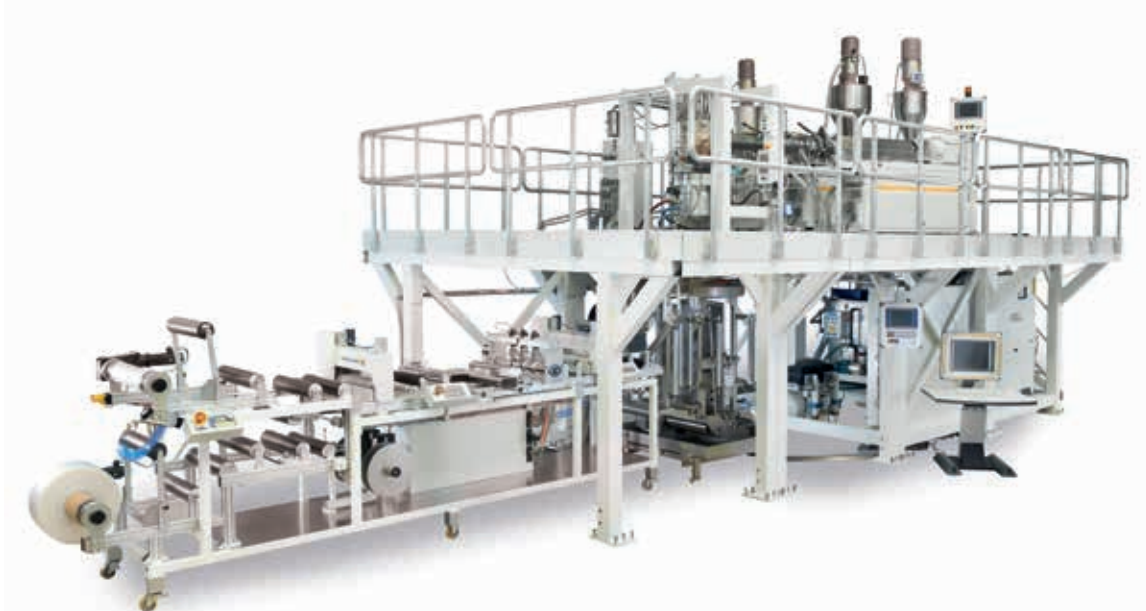
The modular system of COLLIN allows for the configuration of lines with 13 layers and matching screw diameters. The machines can be equipped with melt pumps or gravimetric dosing to ensure that the necessary wall thickness proportions are observed.

COLLIN blown film towers have exchangeable frames for layflat (e.g. carbon rolls, wooden slats etc.) and fit the modular concept. A huge advantage is the height adjustment for the take-off rolls of the blown film tower. This way, it is possible to individually deal with the cooling characteristics of the polymer. Fundamentally, the lines allow for an enormous range of features such as thickness measurement, annealing tank, corona, camera and edge cutting.



Blown film lines P (water-cooled)

WBL 600 P, WBL 800 P, WBL 1000 P



These lines are designed for the production of films. The radial spiral mandrel distributor provides an accurate thickness distribution, the vertical extrusion in a water cooling ring guarantees optimal transparency of films.

Flat film dies and feedback

BSD, FB 80/3, FB 80/5, FB 80/7, FB 80/9, FB 80/11, FB 80/13, FB matrix



Flat film dies BSD

- ▶ Manually adjustable gap via differential screw
- ▶ Coat hanger distributor
- ▶ Prepared for co-extrusion
- ▶ Automatic die gap setting optionally possible
- ▶ High variability of die width -> 50 mm width grading
- ▶ High temperature version possible up to 450°C incl. lip and side jaw heating
- ▶ Multi-layer die
- ▶ Also available with automatic lip adjustment



Feedback Type 80

- ▶ The flow-optimised feedback represents excellent layer thickness distribution
- ▶ Extremely compact design and shape
- ▶ Very short purging times allow for quick material change
- ▶ Width 80 mm up to 13 layers

Flat film lines

**CR 400/168/168-600 P, CR 400/168/168-800 P, CR 400/168/168-1000 P,
CR 800/300/300-600 P, CR 800/300/300-800 P, CR 800/300/300-1000 P,
CR 250/250-600 P, CR 250/250-800 P, CR 250/250-1000 P**

Flat film lines are particularly used for the production of films or sheets with a variety of options for smoothing, embossing and laminating.

Flat film lines in the pilot sector are especially designed for the customer. Depending on the customer requirement, different designs of roll groups can be offered.

- ▶ Take-off speed standard up to 100 m/min, as option up to 200 m/min
- ▶ Roll position adjustable in x and z direction to one another
- ▶ Vertical as smoothing calender (horizontal die position)
- ▶ Horizontal as chill roll (vertical die position)
- ▶ Web speed steplessly adjustable: 1 - 50 m/min
- ▶ Diverse accessories, for example camera inspection etc.
- ▶ Upscaling to production lines



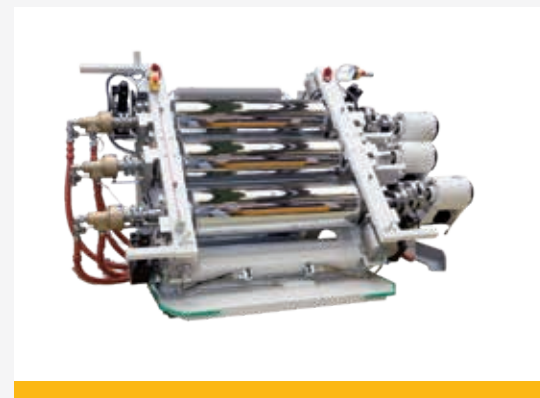
Calenders

**CL 168/250/250-600 P, CL 168/250/250-800 P, CL 168/250/250-1000 P, CL 200/200/200-600 H,
CL 200/200/200-800 H, CL 300/300/300-800 H, CL 300/300/300-1000 H, CL 300/300/300-1200 H**

Calenders are used for the continuous production of semi-finished, thermoplastic films or the continuous finishing of different films and surfaces. An extremely variable, modular system allows for adapting calender units to a wide range of requirements. They are suitable for the production of films and platens with many different types of layer thickness made from various polymer materials as well as for the production of films with extremely low wall thickness tolerance.

Calenders are used in the finishing of films and sheets by lamination or contact lamination. The finishing calenders are used for smoothing thick-walled films or sheets, or for embossing, coating and laminating. Gap measurement is the standard for COLLIN calenders and gap regulation is optional. All of the three rolls are individually powered by servo motors, thus rotation speed frictions can be adjusted. For easy processing, the heavy calender unit can be optionally moved via air cushion. The roll heating control is either done with oil up to 350°C or with water up to 150°C (medium temperature).

- ▶ High flexibility and variability
- ▶ Low wall thickness tolerances
- ▶ Different operating modes
- ▶ Quick roll change
- ▶ 2 speed levels
- ▶ Highest rotation accuracy
- ▶ 2 or 3 rolls - swivelling and height adjustable
- ▶ High precision
- ▶ Upscaling



Winders

W 600 E central, W 800 E central, W 1000 E central, W 600 E contact, W 800 E contact, W 1000 E contact, W 600 E gap, W 800 E gap, W 1000 E gap, W 600 P, W 800 P, W 1000 P, W 600 T, W 800 T, W 1000 T



COLLIN winders are available in different designs. Furthermore, all winders are designed according to the respective web speed. Our Lab Line winders are designed for a winding width of up to 1,000 mm.

Winder types

- ▶ Simple contact or central winders (with or without roller conveyor)
- ▶ Winders, centrally driven, with contact roll
- ▶ Winders with contact slide: with this winding unit, there are three possibilities of winding - central winding, contact winding with adjustable pressure and gap winding with adjustable gap (0 - 30 mm)

Advantages

- ▶ Bidirection winding
- ▶ High accuracy during gap winding
- ▶ High speeds
- ▶ Optimal visualisation and control
- ▶ Numerous features
- ▶ Stand-alone unit
- ▶ Large diameters
- ▶ High flexibility
- ▶ Easy handling
- ▶ Upscaling

Module lines

MF 800 P, MF 1000 P



Module lines are used in the packaging sector for the production of multi-polymer compounds, e. g. with carrier materials. The system allows the integration of different modules such as flat film, blown film and calendering unit as well as miscellaneous additional equipment, e. g. Corona pre-treatment or additional unwinders.

Custom-made solutions can be delivered for the following applications:

- ▶ Flat film extrusion
- ▶ Blown film extrusion
- ▶ Smoothing – Embossing
- ▶ Extrusion coating
- ▶ Laminating
- ▶ Take-off speed up to 200 m/min
- ▶ Roll position mutually adjustable in x and y direction.
- ▶ Good accessibility

Exemplary dimension: LxWxH = 15 m x 7 m x 8.8 m

Stretching lines MDO

MDO 800 single, MDO 1000 single, MDO 800 dual, MDO 1000 dual

The stretching of polymer films improves their characteristics in a variety of ways. COLLIN stretching lines consist of an extrusion group, the stretching unit, take-off and winder.

These lines are used for quality control and the development of new products and processes. They can also be used in the production of narrow films.

The machines also show high variability by the option of one or two stretching gaps. The film can easily be pulled in due to the compact design.





Highest precision, narrow tolerances, cleanliness, process accuracy, good handling of cleaning, clean room conformity, fast and excellent service and customised client trainings are part of the experience.

- ▶ Built according to the specifications of FDA 21 CFR, ISPE, ISO 13485, DIN EN 10204/3.1B, cGMP/GMP.
- ▶ Construction and design conform to hygienic standards.
- ▶ All installations are easy to dismantle and clean.
- ▶ Enormous variability for producing different products.
- ▶ Development work for customers as well as preliminary test in the COLLIN Lab.
- ▶ Standardized validation, qualification and documentation.
- ▶ SCADA software solutions according to GAMP Guideline.

Extras / Features

- ▶ Cutting devices
- ▶ Winder
- ▶ Teflon coatings for hoppers
- ▶ Cooling conveyor
- ▶ Dosing lines
- ▶ Several screws depending on polymer/material
- ▶ Individual solutions like cooling conveyors
- ▶ Water-cooled control cabinets



Presses

P 200 S, P 300 S, P 400 S, P 500 S

The COLLIN Press Type S integrates several advantages of the COLLIN presses – and it is particularly impressive through its practical, quiet hydraulic, modern design and the vertically moveable door.

Especially the good cleanability and the materials that conform to medical standards are convincing.

Exemplary applications

- ▶ Clean room technology – Design for the production of medical or pharmaceutical products
- ▶ Quality control of materials
- ▶ Production of test sheets / samples



Calenders / Roll mills

Small COLLIN Medical Line Calenders are designed for the production of small series, mainly in the pre-clinical selection phase. They can perfectly be combined with the small compounders. Completed by drying and cooling belts, they become complete small size production lines.

COLLIN Medical Line Production Calenders have been used in industry for more than 10 years. By combining with compounder, melt pump, flat film die and cooling belt, a complete production line is created.

Exemplary applications

- ▶ Drug carrier
- ▶ Tablet production
- ▶ Prototype production
- ▶ Silicone mixtures
- ▶ In R&D, for small series and initial tests



Extruders

E 12 P, E 16 P, E 20 P, E 25 P, E 30 P, E 45 P, E 60 P

For medical technology, pharmacy as well as food (also pet), the Medical Line Extruder presents itself as compact and modular. The machines can be used in various ways as they are powered by an innovative concept. Many different types of downstream equipment can be connected and numerous additional equipment as well as features can be realised.

Exemplary applications

- ▶ Multi-layer strand production
- ▶ Mono & multi-lumen hoses
- ▶ Mono & multi-layer applications
- ▶ Hoses for coronary invasive therapy
- ▶ Catheters



Compounders

ZK 12 P, ZK 16 P, ZK 25 P, ZK 35 P

The COLLIN MEDICAL LINE Compounder serves a variety of applications in the pharmaceutical and medical sector. Due to the compact design, the lines are easy to clean and it takes extremely short periods of time to change the material.



Exemplary applications

- ▶ Incorporation of active agents in carrier materials
- ▶ Degassing of volatile components
- ▶ Pelletizing of tablet premixes
- ▶ Mixing and dispersing of pigments
- ▶ Incorporation of solid and liquid additives
- ▶ Incorporation of organic and non-organic fibres
- ▶ Blending of polymers and pastes
- ▶ Continuous reactive extrusion

Blown film lines P (air-cooled / water-cooled)

BL 400 P, BL 600 P, BL 800 P, WBL 600 P, WBL 800 P

Compact design with small stand space, easy operation and accurate, reproducible positionings as well as quick changes of products and parameters are what makes COLLIN blown film lines so unique.

They are used for function tests of polymers and compounds, for the development of multi-layer films, the quality control of the pigment dispersion, the control of the dispersing behaviour of compounds and extruders or for the production of small film hoses in the food or medical sector.



Blown film lines with air cooling of the film

Blown film lines with a diameter of 20 to 120 mm are suitable for the production of hoses with lay-flat widths of up to 790 mm.

Blown film lines with water cooling of the film

These COLLIN lines are used for the production of infusion bags or other mono or multi-layer products. Vertical extrusion into a water cooling ring delivers optimal film transparency, e.g. suitable for PVC-free infusion bags or blood plasma bags.

Tube lines



COLLIN tube lines are used for the production of multi-layer multi-lumen resp. plastic tubes for medical applications.

The spectrum of diameters range from thinner than a human hair (<math><100\ \mu\text{m}</math>) up to approx. 5 mm. By means of coextrusion, the properties of the tubes, with a design of up to 5 layers, are adapted to the requirements of the field of applications.

The inner geometry of COLLIN MEDICAL LINE tubes ranges from simple mono-lumen up to multi-lumen tubes, which contain up to seven channels, which are separated from each other. It is clear that all geometric parameters are extremely, narrowly tolerated. This geometric variety is multiplied by using different plastics.

Furthermore, polymer materials can be combined with metallic supporting bodies with different, geometric characteristics.

Advantages

- ▶ Up to 5 layers
- ▶ Up to 7 separate channels
- ▶ Enormous variability in production
- ▶ Continuous production, compliance with all tolerance requirements
- ▶ Lines, which can produce around the clock
- ▶ Highly tempered stainless steel (316L) for all product-touching parts
- ▶ Standard-compliant surfaces

Applications

- ▶ Minimally invasive surgeries
- ▶ Dialysis tubes
- ▶ Infusion tubes
- ▶ Catheter tubes
- ▶ Drainage tubes
- ▶ etc.

Strand lines



What is special about the COLLIN strand lines is that all production steps come from a single source – compounding, co-extrusion, take-off and cutting. A highlight is also the vertical water bath – a COLLIN innovation which guarantees reliable roundness.

For an exact throughput of the line, the extruders are equipped with melt pumps and pressure/speed controls. By using a multi-layer die, the strand is directly and vertically extruded into a water bath. This process eliminates any influence of a calibration system. The gravitation guarantees high accuracy of diameter and roundness.

Moreover, a continuous water flow guarantees an absolutely calm water surface when the product enters the cooling tank.

- ▶ All production steps from one source
- ▶ Reliable roundness and diameter by vertical water bath
- ▶ Different take-off speeds
- ▶ Enormous variability in production
- ▶ Continuous production
- ▶ Lines, which can produce around the clock



PRESSURE FILTER TEST

COLLIN pressure filter tests can determine the difference in quality of a polymer through agglomerates, insufficiently dispersed fillers or impurities. They can be used in the field of production development for optimising colour masterbatches, for quality control or output and input control of masterbatches, compounds or polymers. The pressure filter tests can also be combined with numerous extruders or compounders.

Pressure filter test

TL FT MP, FT MP, AFT MP, AFT MP E 20 Autosampler

Manual Pressure Filter Test FT MP

A filter cassette in pre-heating position allows for a quick, clean and manual filter change without extruder stop. During the filter change, the melt is deflected via a bypass valve in front of the filter.

- ▶ Easy and safe handling
- ▶ Improved reproducibility by double-chamber hopper
- ▶ Little idel times during screen change by cassette system
- ▶ Filter change without extruder stop
- ▶ Saving of working time due to optionally available double-chamber hopper

Application

- ▶ Product development - optimizing colour masterbatches
- ▶ Quality monitoring and control
- ▶ Incoming inspection and output control of masterbatches, compounds or polymers





Automated Pressure Filter Test AFT MP

The screen change is done automatically in this version. During the filter change, the extruders and melt pumps continue to work. A filter magazine for up to 20 filter cassettes ensures the continuous operation of the pressure filter test. The automatised pressure filter test is used for example for pressure filter tests or for the quality control in recycling.



Automatised Pressure Filter Test with Autosampler AFT MP E 20

With its full automation, the COLLIN pressure filter test with autosampler considerably shortens downtimes and provides a very high reproducibility. The unique automatic material and screen change systems allow for processing up to seven material samples one by one – without system stop.

Online Viscometer

MOV



The online viscometer of COLLIN provides a continuous control of the melting viscosity on a production extruder.

Two melt pumps with only a single drive ensure that the melt is kept under control permanently. The COLLIN POLYTEST LINE measuring device has a compact design. Furthermore, it is characterized by the flexibility and the closed material circulation.

- ▶ Precise, user-friendly
- ▶ Cost-efficient, since there is only one drive motor for two pumps
- ▶ Clear, simple display of the viscosity value
- ▶ Connection to each extruder, compounder and production extruder is possible

Rheometer

Rheometers serve in determining the melt viscosity, thus they are an essential element of the permanent quality control during polymer processing.

The Mono Online Rheometer MOR is used for measuring a viscosity curve on polymers. The viscosity is measured by using a melt flow which flows through a round capillary. The melt is either directly taken out of the extruder or as a side flow.

The Wide Range Online Rheometer WROR determines the viscosity of a plastic melt. The range of shear rates is very broad due to the 3-capillary concept of COLLIN.

The viscosity curve can be determined online at many points. A triple spindle distribution pump provides an even melt distribution on three capillaries.

MOR, WROR



Film Inspection

With these systems, it is possible to see optical defects on films. Common areas of use are the detection of gel particles for assessing the quality of plastics and impurities like black spots or the detection of pigment agglomerates in coloured films.

The COLLIN Film Inspection System FI is a remarkably high-quality test system which allows for a definition of up to 10 error classes and 14 error criteria. The line determines optical mistakes in a running flat or blown film. Between the cooling and take-off rolls, a LED light source as well as a line camera are installed. Thus, errors in the film can be detected and evaluated.

- ▶ Use as stand-alone system or integrated into the extrusion process
- ▶ Numerous adjustment possibilities of the error parameters
- ▶ 24 hours operation is possible
- ▶ Online result display of the running test

The **COFICOS** line is suitable for tests under unfavourable conditions close to a production line. The flat film die points inside a closed test room with light source and camera. This way, no foreign particles get on the test film. The flat film line is suitable for an optical film inspection for standard polymers with a maximum film thickness of about 100 µm.

The line is moveable and comprises the film production unit (optionally with camera) and the take-off unit, depending on the order with a winder or a cutter as well as with sorting of marked and unmarked samples.

FI, COFICOS



Multi-inspection

AI



The COLLIN multi-inspection impresses through its broad range of possible applications – the multi-purpose film quality test device measures, depending on the customer's needs, optically, mechanically and rheologically.

The lines have a modular design. They consist of a chill roll unit with a subsequent roll mill for optical and mechanical film inspection including a film winder and optionally upstream rheological measuring section.

Closed chill roll line for optical film inspection system

The complete unit is entirely closed with the exception of the entry of the film die. This test chamber is set to overpressure during operation in order to prevent ingress of dirt or dust.

Optical film inspection

Behind the chill roll, the film runs across the optical inspection field, consisting of a lighting unit and a camera. At the moment, further available units are a colorimetry system with colour sensor and a NIR measuring system for identifying foreign polymers.

For the inspection system (optical, IR, colorimetry, etc.) proven COLLIN single components are used. Implementation into the system is done centrally.

Mechanical inspection

Along the measuring distance, a defined expansion is inserted into the film via two rotating roll pairs. The necessary forces are measured on the line. In doing so, the ratio between stress and strain can be determined online. For further processing of the film resp. edge strips, film winders, a cutting system or extraction are available.

Technical center, test laboratory

In order to support COLLIN customers optimally, in our technical centre, there are different lines and test devices for trials or trainings.

Range of services

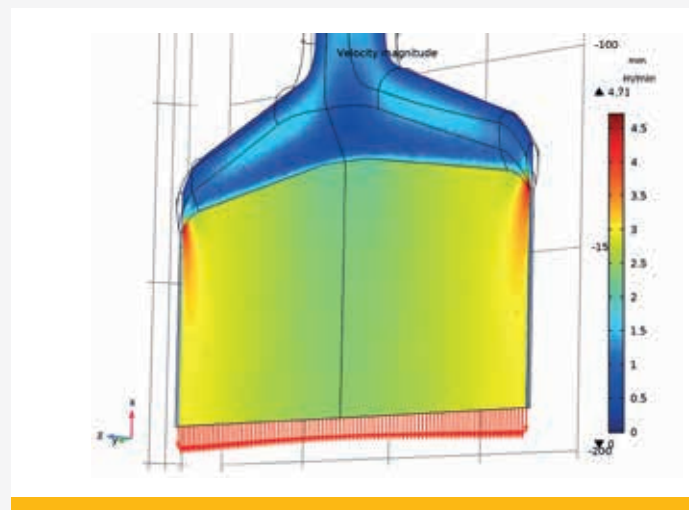
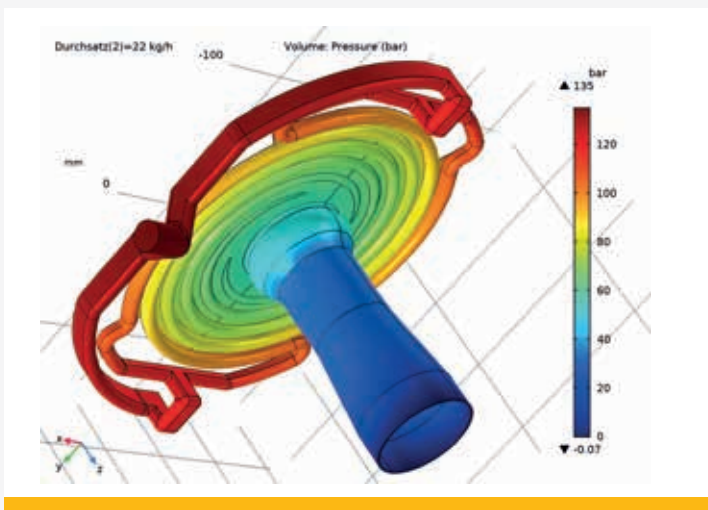
- ▶ Trainings for customers - for example new technologies with their or our machines
- ▶ Test of the processability of new customer materials or recipes
- ▶ Testing of new COLLIN developments
- ▶ Validation of new machines
- ▶ Pre-tests for selecting or designing customer lines
- ▶ Internal training for employees
- ▶ Support of our customers on-site, online or by phone in case of procedural questions



Furthermore, we also offer material tests as service:

- | | |
|---|----------------------------|
| ▶ Viscosity measurement via WROR | ▶ Microscopic examinations |
| ▶ Film characterisation via COFICOS or multi-inspection | ▶ Film tensile test |
| ▶ MFR/MVR measurement | ▶ Moisture measurement |

Additionally, we can support our customers in product development via simulation methods (flow simulations).





The COLLIN TEACH LINE comprises a series of compact tabletop machines for the processing of polymers specifically designed for the fields of teaching & training as well as research & development.

With the help of the lines, it is possible to simulate different discontinuous and continuous processes of plastic processing or to test samples.

Your advantages at a glance

- ▶ Entire processing lines for the production of granulate, blown and flat films or sheets, hoses or pipes can be set up.
- ▶ All machines are compatible in design, performance and height so that reconstructions or extensions can be implemented quickly.
- ▶ The electrical drive technology and control are located in the machine base.
- ▶ High durability and production of flawless samples.
- ▶ First screening of new materials requires little effort and material consumption.
- ▶ Excellent training opportunities on table-top units without long starting processes.
- ▶ Perfectly suitable for quality control.

Roll mills

The roll mill is used for mixing, plasticising, kneading and laminating of plastics and elastomers. The COLLIN machine is ideal for examining small quantities and for trainings.

W 100



Extruders

The single-screw extruder is the standard machine for the continuous plasticising of polymers. The table-top units combine high process variability with accurate control and regulation of all parameters.

E 12, E 16, E 20, E 20 H



Compounders

The COLLIN compounders are suitable for the continuous melting, mixing, homogenising, alloying and extruding of plastic materials.

All COLLIN compounders are available for co-rotating and counter-rotating operation. The table-top compounder consists of a process part with a drive, set up on the electrical switch cabinet and also a retrofit is possible.

ZK 12, ZK 16, ZK 25



Blown film dies

AW Mono, RW 25



The blown film die with a radial spiral mandrel distributor provides extremely thin and even blown films.

Quick material changes are possible.

The COLLIN blown film dies are available as 1, 3, 5 or 7-layer versions.

Blown film lines (air-cooled)

BL 200



The Blown Film Unit BL 200 is a compact and easy to handle unit for the production of blown films made of all standard polymers.

Special characteristics are a height-adjustable take-off, a separately driven winder as well as a cooling blower, which is integrated into the machine base. The control panel includes all electrical and pneumatical control units and operating elements. A blown film die (up to 30 mm Ø) with gap-adjustable cooling ring completes the unit and guarantees extremely thin as well as uniform blown films.

- ▶ Very compact table-top machine
- ▶ Height-adjustable take-off
- ▶ Thin and uniform bubbles
- ▶ Available with mono or multi-layer die
- ▶ Smallest bubble diameter
- ▶ Lowest material input

Flat film line

CR 72/72/72-200



This line combines the known features of a cast film line with those of a small calender in a compact arrangement.

Different processes are possible due to the flexible rolls:

- ▶ Smoothing of films
- ▶ Laminating of films
- ▶ Casting of low viscosity melts with vertical die

Stretching lines MDO

MDO A, MDO B, MDO C, MDO FT



Stretching lines are used for monoaxial stretching of straps and monofilaments. This process allows for the characteristics of polymers to be changed considerably so that there are more possible applications. Moreover, it improves characteristics like tensile strength and stretching as well as the barrier effect against water and gases.

Applications

- ▶ Short-gap stretching for films out of PP and PE
- ▶ Long-gap stretching with IR auxiliary heating for films e.g. out of PET
- ▶ Long-gap stretching with hot air duct for monofilaments and straps

Water baths

WB 850

The COLLIN TEACH LINE Water Bath is used for cooling polymer strands. With its small and compact size, the COLLIN TEACH LINE water bath can easily be placed on any table.

The strand guide in the water is done via two guide rollers. The water bath also has two hanger supports and four rubber feet. The ideal amount of water flow is adjusted at the inlet with a control valve.



Pelletizers

SP



The COLLIN TEACH LINE Strand Pelletizer consists of a pelletizing unit with a pair of feed rolls, guide piece, fixed counter knife and rotating fly cutter.

The gap between the rotor knife and the static knife can be adjusted via the pressure and the tractive knife.

A transparent door helps observing the feeding and cutting process.

Pipe lines

RW

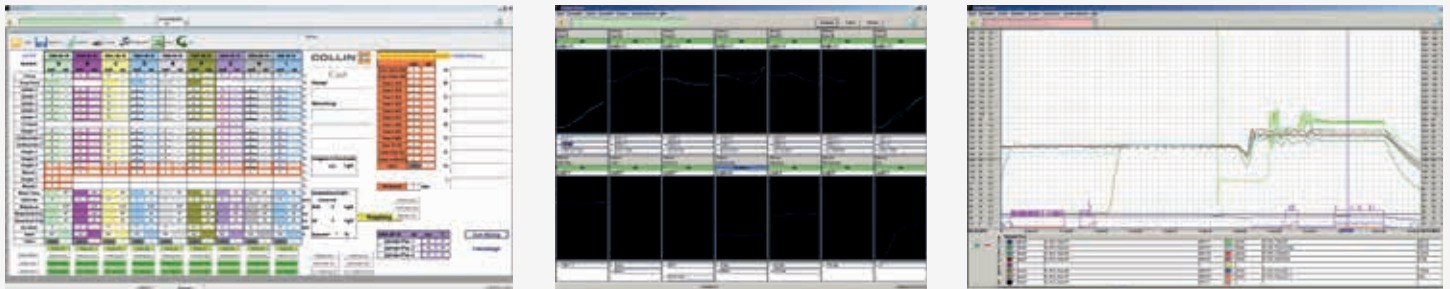
The pipe line consists of a pipe die, the Vacuum Tank VKT 1000, calibration plate, compressed air drying device and Belt Take-Off BAW 130 with Horizontal Winder WR 650 or coil winders.



All COLLIN single machines are available in a modular version or with its own control. For complete lines a control station, individually adjusted to the respective line, is installed. Moreover, it is beneficial and time-saving that COLLIN integrates the pre-heating automatic.

Visual Fecon

COLLIN optionally offers the software package Visual Fecon for all machines and lines.



Measured value acquisition and evaluation via PC

- ▶ Permanent data recording of all values relevant to the process
- ▶ Archiving and loading of programs and parameters
- ▶ Freely configurable faceplates (i.e. each channel can be displayed as a line field with set and actual value as well as regulation ratio)
- ▶ Freely configurable, current and historical line and trend diagrams
- ▶ Collecting, managing, printing and reporting of any errors, changes of the machine setpoints and parameters and system messages with export function
- ▶ Saving of current screen pages for further printing or archiving
- ▶ Conversion of freely selectable measured values and periods of time for evaluating/editing with Excel
- ▶ Lock function on four levels by indicating user name and password
- ▶ Option of integrating pictures for creating process pictures with insertion of measurement values
- ▶ Support for different acoustic alarm signals possible
- ▶ Option of multi-machine groups

The communication with COLLIN machines takes place via an included external adapter box (serial interface via USB) or Ethernet. Of course, customers of COLLIN have the option of remote maintenance of their control units.

SPECIAL SOLUTIONS



Foam Extrusion Line

The line is a combination of a compounder (mixing and gas injection) and a single-screw extruder (cooling) as well as a calibration unit and a take-off for foamed sheets.

With its machines and complete test and production lines, COLLIN represents absolute modularity and flexibility.

In a modular way, machines can either be connected which results in a complete line or they can also be removed.

Furthermore, COLLIN offers different speeds up to 200 n/min and widths of more than one meter.



Direct Extrusion

Entire production lines with integrated compounder can optimally be developed for the extrusion of films, pipes and much more. The setting is perfect for simulating production conditions.



Pipe extrusion line

COLLIN pipe extrusion lines can be used for the production of mono or multi-layer pipes with a diameter of 1 - 50 mm for all thermoplastic materials. Main components are mono or multi-layer pipe die for 1 - 7 layers, vacuum and cooling tanks, take-offs, winder and cutting devices.



Cast line for optical films

The 3-layer coextrusion line with three extruders is ideally suitable for the production of films and sheets (200 μm - 3500 μm) for example for TV flat screen elements.

Main elements of the COLLIN line are a cast roll with a diameter of 800 mm, a special air cooling of the outside of the film, a start-up winder and the edge cutting unit.



Fleece line for respirator masks

With the COLLIN fleece line, customers can develop and produce, high-quality, very fine non-woven filter fleece for respirator masks according to FFP2 or FFP3 standard.

It is advantageous that the complete line is developed in Germany at COLLIN and the spinneret at the Austrian subsidiary COMELT. Thus, also the quality and hygienic standard for the European market is assured.



SPECIAL SOLUTIONS

Production line for surgical filtering facepieces



Together with RoboOptic Systems, COLLIN Lab & Pilot Solutions developed a fully-automatic production line for surgical filtering facepieces according to the European standard.

This includes the feeding as roll goods, the folding and pressing of the single layers, the cutting of the facepieces as well as the applying of the ear loops and the nose clip.

COLLIN AFTER SALES & SERVICE

No matter whether it is about repairs, upgrades, new control units, spare parts for medical lines, parts, if required, also from 1980, project development or calibration – the COLLIN after sales team, in cooperation with the service team, is ready for finding a solution for the customers' request.

The COLLIN after sales team consists of competent experts – traders, industrial mechanics and mechanical engineers. Together, they perfectly cover the large spectrum of service offers. Because in after sales, know how is important – therefore, the team has to have a wide knowledge of the COLLIN range of products as well as process knowledge. Thus, best advice and support of our customers is possible.

Our offers in after sales service

- ▶ **Specific.** Retrofittings & upgrades
- ▶ **Up-to-date.** Software & technology upgrades
- ▶ **Optimized.** Control updates
- ▶ **Perfect.** Repairs of lines
- ▶ **Checked.** Maintenance & calibration
- ▶ **Borrowed.** Lease articles on request
- ▶ **Practical.** Order processing & processing of export shipments
- ▶ **Complete.** Execution of complex projects



COLLIN SOLUTION PARTS

- ▶ **Fits.** Worldwide dispatch of wear and spare parts
- ▶ **Special.** Customized spare parts, e. g. for medical lines

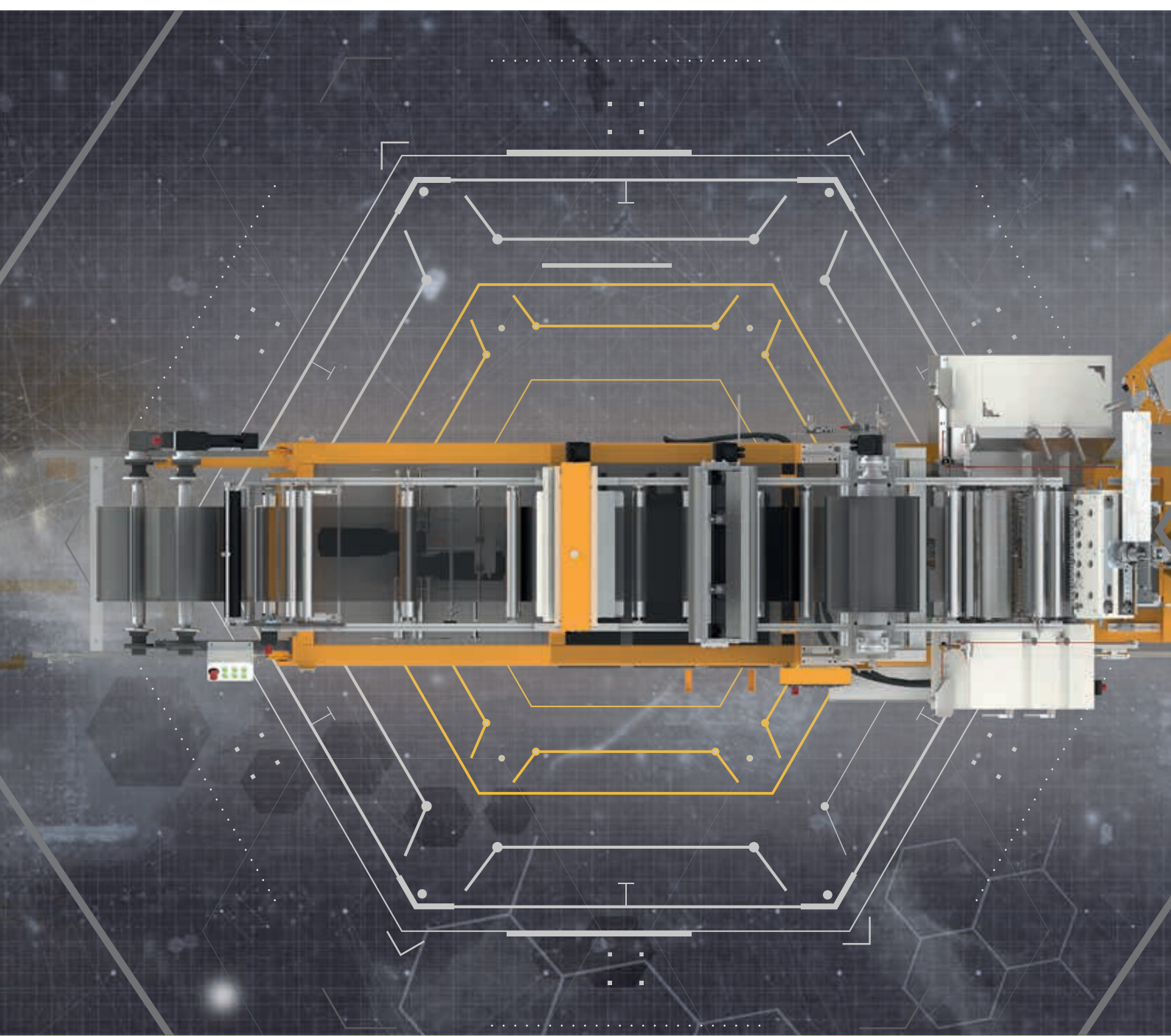
For our customers, it is practical that spare parts are available for 10 years, mechanical parts often up to 1980 (year of construction). Furthermore, the years of customer loyalty speaks in favor of COLLIN.

At COLLIN, service is of utmost priority. Another advantage for our customers is the fact that the after sales department cooperates closely with the service department. Thus, expert knowledge is combined with a focus on our customers. After having purchased a line, our customers are supported comprehensively and worldwide by the COLLIN team.

In addition to regular maintenance work, we support our customers during maintenance as well as calibration of a line. Furthermore, our team takes responsibility for the integration of COLLIN machines into existing lines and for the adaptation of existing lines to new challenges. In nearly all cases, the modular design of all COLLIN lines is a big advantage.

If repair is not possible, we will put you in contact with our COLLIN sales team in order to offer an adequate new machine.

Since COLLIN has always been attaching great importance to solid machine construction, in many cases, it is reasonable to think about a retrofitting of machines, especially under consideration of new safety aspects.



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