

QUALITY PRODUCED IN GERMANY.

THEYSOHN[®]
EXTRUSIONS-
TECHNIK

THE QUALITY

SMALL ENOUGH TO LISTEN STRONG ENOUGH TO LEAD

SUSTAINABLY

We want to achieve more together by treating our environment and its resources responsibly. Through the constant further development of our machines, we try to reduce the energy and water requirements and to keep the cost of materials as low as possible.

HUMANLY

The cooperation with our employees is very trusting. We encourage every employee and recognize them as an independent personality. Only in this way can all work processes flow smoothly into one another and create a pleasant working atmosphere.

ECONOMICALLY

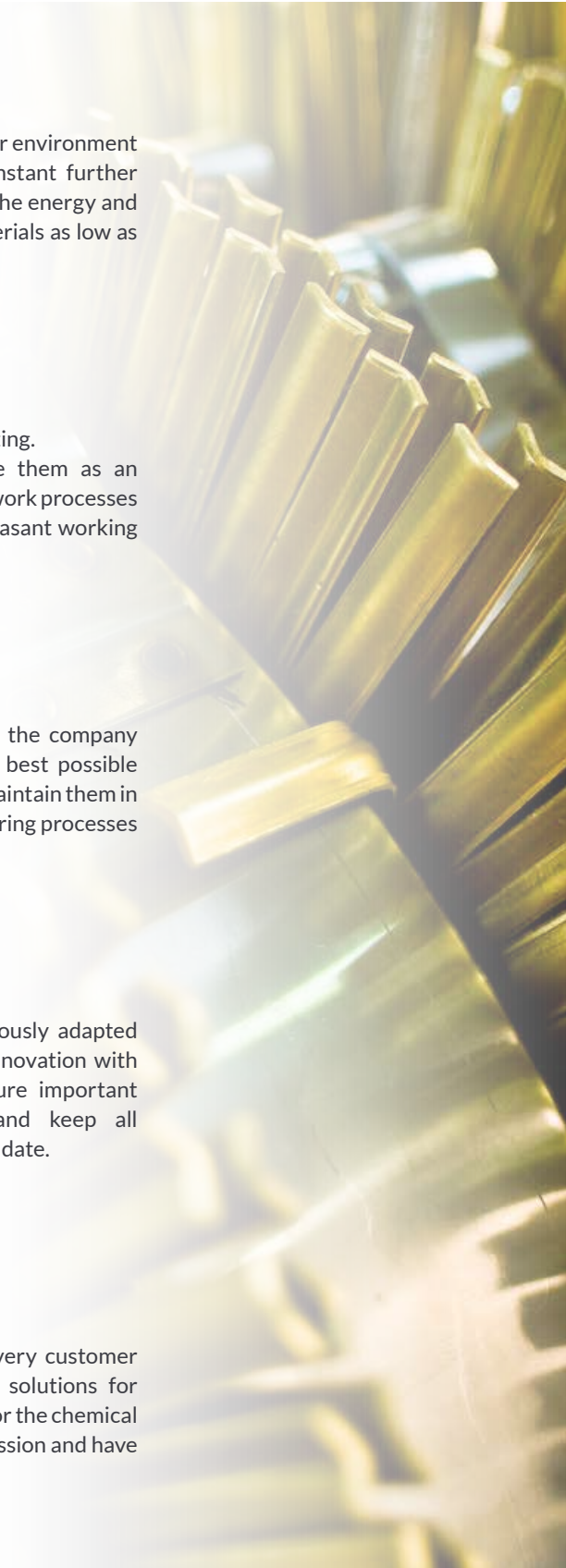
We want to achieve more together by running the company economically. We therefore try to achieve the best possible standards with the means available to us and to maintain them in the long term. All work processes and manufacturing processes are permanently checked and optimized.

FUTURE ORIENTED

Our operating and office equipment is continuously adapted to the necessary requirements and combines innovation with technology that inspires. In this way, we secure important modernization measures in the company and keep all development and manufacturing processes up to date.

RELIABLE

Theysohn stands for a business partner that every customer and entrepreneur can trust. Competence and solutions for plastics machines, plastics processors as well as for the chemical and food industry at home and abroad are our passion and have been for several decades.



STEN, SUPPLY.



SALZGITTER, GERMANY

Theysohn Salzgitter is the location where the production for the heart of every extruder and compounder is located, namely the plasticising unit. In Salzgitter, spare parts are also offered for extruders, for example single screws, twin-screws, plus the associated barrels, compounder casings, but also repairs of worn process units. The know-how built up over decades in the manufacture of extruder components is the basis for the perfect quality of parts produced by Theysohn.

Salzgitter is also home to the competence centre for Theysohn TSK compounders and the TSKaskade Unity. It develops and manufactures compounders for filled or reinforced plastics, for the production of additive or colour masterbatch, for alloying and degassing plastics or for reactive extrusion applications.

STOCKERAU, AUSTRIA

Theysohn Austria is the competence centre for counter-rotating twin-screw extruders and conceptual development of complete pipe, pelletising and profile lines. With the newly developed energy-saving extruders, Theysohn is setting new standards in terms of efficiency, productivity and reliability. Theysohn Austria is also developing 3-layer pipe technology, C-PVC pipe and co-extrusion for any PVC pipe and profile and is constantly working to further maximise this technology.

PUNE, INDIA

The plant in India produces extruders and downstream equipment for the Indian market. This plant is also responsible for the support of the Asian and East African markets.

USA

The sales teams in Fort Worth, USA guarantees our customers in North America the best service.

PVC-Pipe Extrusion

Theysohn is the technology leader in the field of PVC pipe extrusion due to the sophisticated process technology and continuous further development of the PVC pipe extrusion lines. Theysohn is a full-range supplier for pipe extrusion systems that are individually adapted for each customer.

Functionality, modularity and optimally coordinated process technology to minimise wear and energy consumption are at the forefront of the CON and XTS series. The truss base frame of

the extruders achieves an optimal balancing act between slim construction and robust machine design of the new CON and XTS series.

The RKS Streamliner pipe head series have been created through the continuous improvement and development of the existing Theysohn series. Theysohn developed the TW 4-10 especially for 3-layer pipe production with a foam or recycled core. The TW 250 combines feed block with pipe head. This shortens the dwell time of the material in the head and results in savings in the area of formulation.



FEATURES

- Parallel extruders (screw dm from 78 - 136 mm, 24D-36D)
- Conical extruders (screw dm 50 - 80 mm)
- Wear-protected screws and barrels in T5000 and T8000 (tungsten carbide)
- Completely chrome-plated screws for C-PVC processing
- Gravimetric dosing system
- All common PVC formulations
- RKS Streamliner pipe head)
- TW 4-10 Feedblock
- TW 250 direct pipe head
- Flexible downstream

APPLICATIONS

- PVC single-(16 - 710 mm dm), dual-(16 - 250 mm dm), quadruple-(16-63 mm dm) strand compact pipe
- 3-layer pipe with foam/recycling core 32 - 710 mm dm
- C-PVC hot water pipe single/dual strand 10 - 400 mm dm
- Cable protection pipe 10 - 400 mm
- Co-extruded downfall pipes 32 - 160 mm
- Pressure, irrigation, drainage systems
- Bore hole pipes

PVC-Profile Extrusion

Profile extrusion includes a wide range of products.

Whether window profiles, WPC profiles or technical profiles such as gutters, downpipes, foam profiles, cable ducts, skirting boards, main profiles in single and double strand extrusion, secondary profiles up to 4-fold strand, co-extrusion, etc, Theysohn is a full-range supplier for profile extrusion lines that are individually tailored for each customer.

The Theysohn XTS-P series is specially designed for this purpose. The highest melt quality and flexibility are achieved with the proven and reliable 32D process units. The newly revised conical

“Theysohn CON” series for the lower and medium output range is used as main extruder as well as co-extruder in pillar version. With the machine sizes CON 40, CON50, CON63, CON68 and CON80, a wide range of possibilities with process technology that has proven itself over many years is offered.

Functionality, modularity and optimally coordinated process technology to minimise wear and energy consumption are at the forefront of the CON and XTS series. The truss base frame of the extruders achieves an optimal balancing act between slim construction and robust machine design of the new series.



FEATURES

- Parallel extruders (screw dm from 78 - 122 mm)
- Conical extruders (screw dm from 40 - 80 mm)
- Process lengths from 24 - 32D
- Wear-protected screws and barrels in T5000 and T8000 (tungsten carbide)
- Completely chrome-plated screws for WPC-PVC or soft PVC processing
- Gravimetric dosing system
- Pillar variant for maximum flexibility and minimum space requirement in production
- Melt pressure of up to 550 bar (Co-Extrusion)

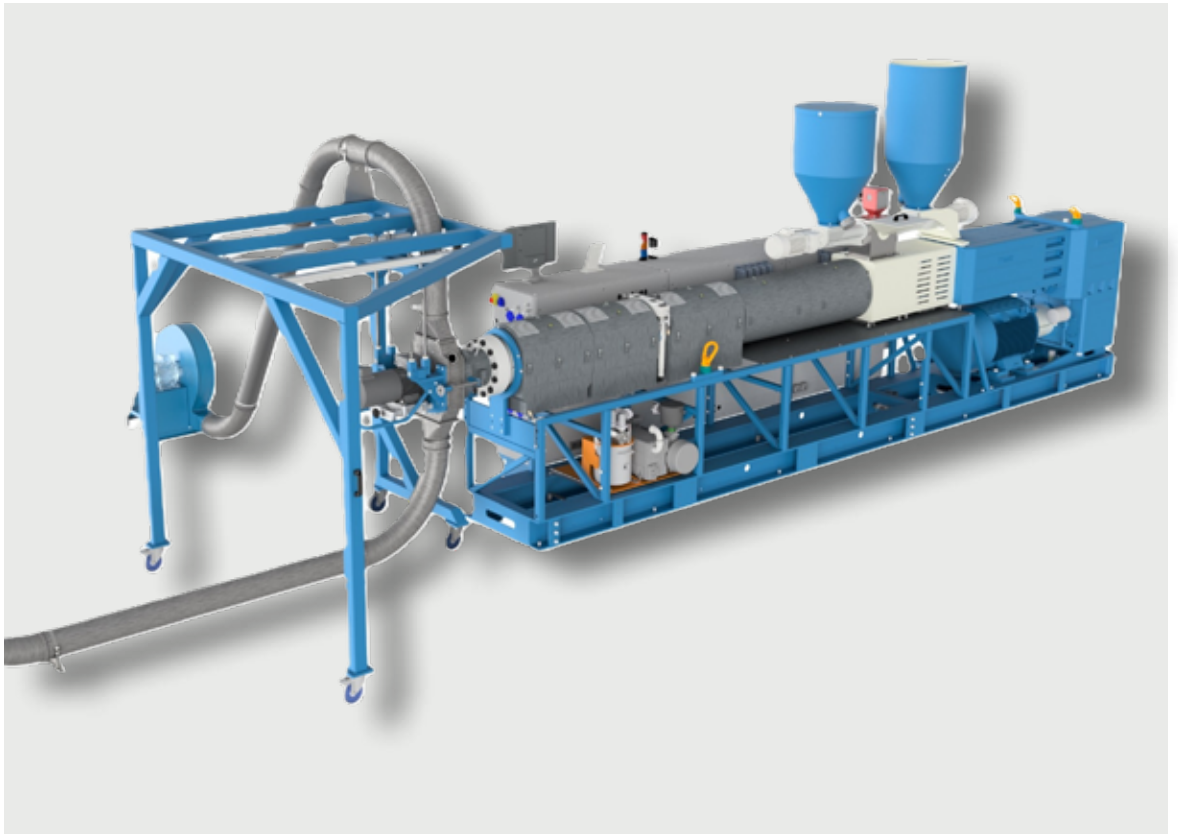
APPLICATIONS

- Turnkey solutions and components for
- Hard & foam profile in single/multi-strand production
 - Window profiles and sills
 - Door / wall panelling profiles
 - Rain gutters, downpipes
 - Foam and WPC profiles
 - Cable ducts
 - Skirting boards, Curtain rails
 - Boards
 - Technical profiles
 - Co-extrusion solutions
 - Project planning

PVC-Pellet Extrusion

The pelletising and processing of recycled material and dry-blend is becoming increasingly important, especially with regard to the environment and climate protection. The recycled material produced or purchased by the customer can be filled up with Theysohn's pellet extrusion line and/or processed with various additives. Differences in quality and bulk density are compensated for in the pelletising process by state-of-the-art dosing and process technology, which guarantees a stable extrusion process in the next step.

The XTS 122 extruder is a flexible high-performance extruder that achieves the highest melt quality through the proven processing units in 28D, 32D or 36D. The GKX pelletising head from Theysohn has been designed for pelletising rigid and flexible PVC as well as for highly filled PVC formulations. The pelletising head housing can be easily and quickly separated from the extruder via quick-release fasteners and reassembled. The tested AIR-Through System prevents the pellets from sticking and adhering in the pelletising head housing and ensures optimum discharge.



FEATURES

- Parallel extruders (screw dm from 88 - 136 mm, 24D-36D)
- Wear-protected screws and barrels in T5000 and T8000 (tungsten carbide)
- Completely chrome-plated screws for soft PVC processing
- Gravimetric dosing system
- Control of GKX pelletising head/ downstream via TEC-5s extruder controller
- 1, 2, or 4 knives, central cutting head
- Moveable housing with quick release
- space-saving installation variants, single or double BigBag station

APPLICATIONS

- Hard and soft PVC
- High-filled PVC
- WPC (PVC, PE, PP)

PVC-Siding Extrusion

PVC siding is used for the facades of new buildings, conversions and renovations of apartment buildings, offices and villas. The Theysohn XTS series offers the perfect high-performance extruder for any high-speed siding installation. In combination with an extruder from the newly revised conical "Theysohn CON" series, maximum flexibility and productivity in siding co-extrusion is guaranteed. In addition Theysohn offers turnkey solutions for complete siding lines from extruder to die, calender, film unwinders, calibrating table, slotters, punches and stacking tables.

The flexible siding downstream from Theysohn rounds off the range for siding extrusion. The siding downstream consists roughly of a tempered 3- or 4-roller embosser with optional direct foiling, calibration table with hot and cold water tank and tool-mounting frame, air knife system, slotter, haul-off, punch and drop table. With individual adaptations, all customer wishes are fulfilled in the best possible way. Thanks to Theysohn's own control technology, the complete siding system is simple and easy to operate.



FEATURES

- Parallel extruders with screw dm from 88 - 136 mm
- Conical extruders with screw dm from 50 - 80 mm
- Process lengths from 24 - 32D
- Wear-protected screws and barrels in T5000 and T8000 (tungsten carbide)
- Completely chrome-plated screws for soft PVC processing
- Gravimetric dosing system

APPLICATIONS

- Turnkey solutions and components for co-extruded panels and siding
- System technology for ½" and ¾" siding systems
- Single and dual strand production
- Wood-look siding can be produced by using embossing rollers
- Co-extrusion or film application systems allow for many different styles and colours

CO-ROTATING TWIN-SCREW EXTRUDERS

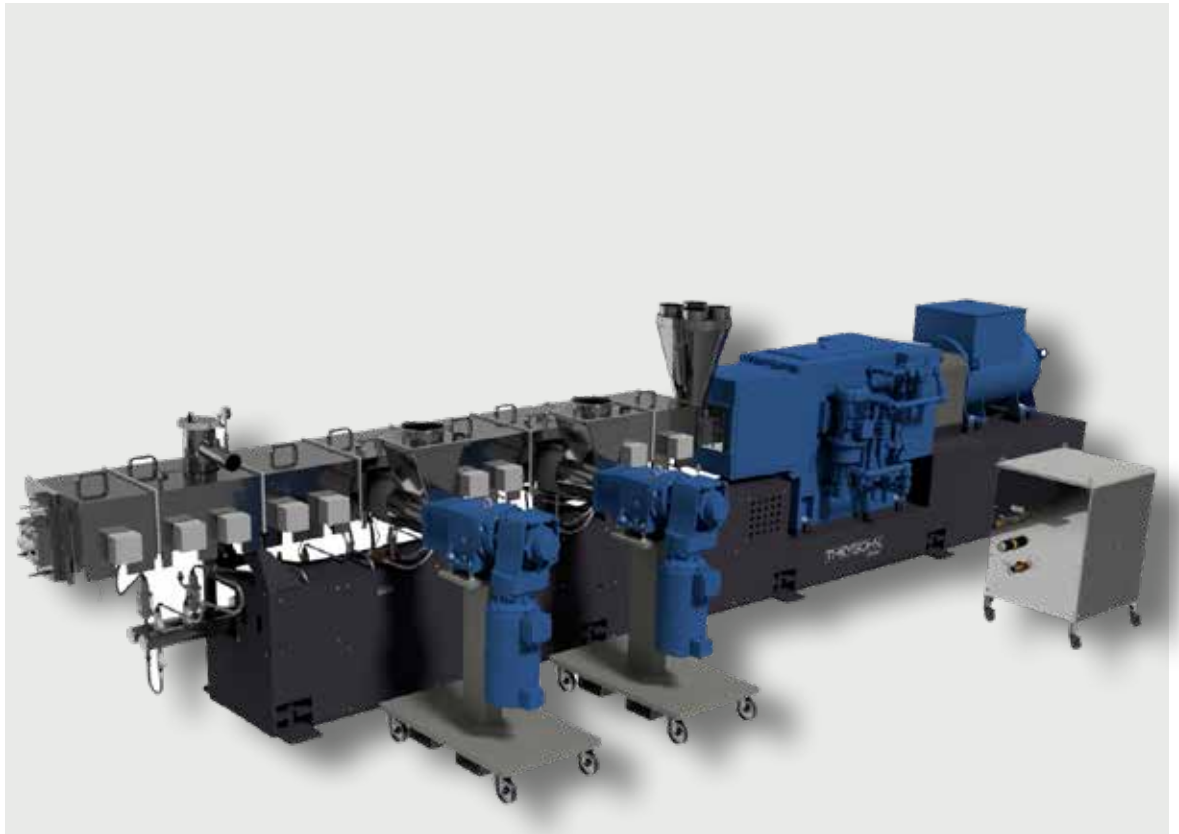
Twin-Screw Extruder TSK

With the TSK co-rotating twin-screw extruder, Theysohn offers a series with excellent flexibility to fulfil process requirements.

The Theysohn TSK twin-screw extruders with a Do/Di 1,55 are designed for processes with highest torque requirements.

The TSK series impress with the modular construction of their process parts for barrel sections and screw elements and with a high efficient temperature control at highest screw speed and torque.

The Theysohn TSK Compounder can be used for all compounding and also reaction tasks thanks to its technically sophisticated concept.



FEATURES

- Screw dm 20 – 250 mm, up to 80D
- Torque up to 18 Nm/cm³, screw speed up to 1200 min⁻¹
- Fully intermeshing, self-cleaning, co-rotating screw elements
- Extruder barrels made of various materials, nitrided steel up to special high-alloy wear protected inserts
- Modular, segmented design of barrels and screws for maximum flexibility
- High performance gear boxes with over-load coupling between motor and gear box

APPLICATIONS

- Filled and reinforced plastics
- Production of color masterbatch, coloring of polyolefins
- Cable compounds
- Alloying of compounds
- Degassing tasks
- Applications in the area of reactive extrusion
- Powder coating
- Food and non food extrusion
- Other applications

Twin-Screw Extruder TSK-HV

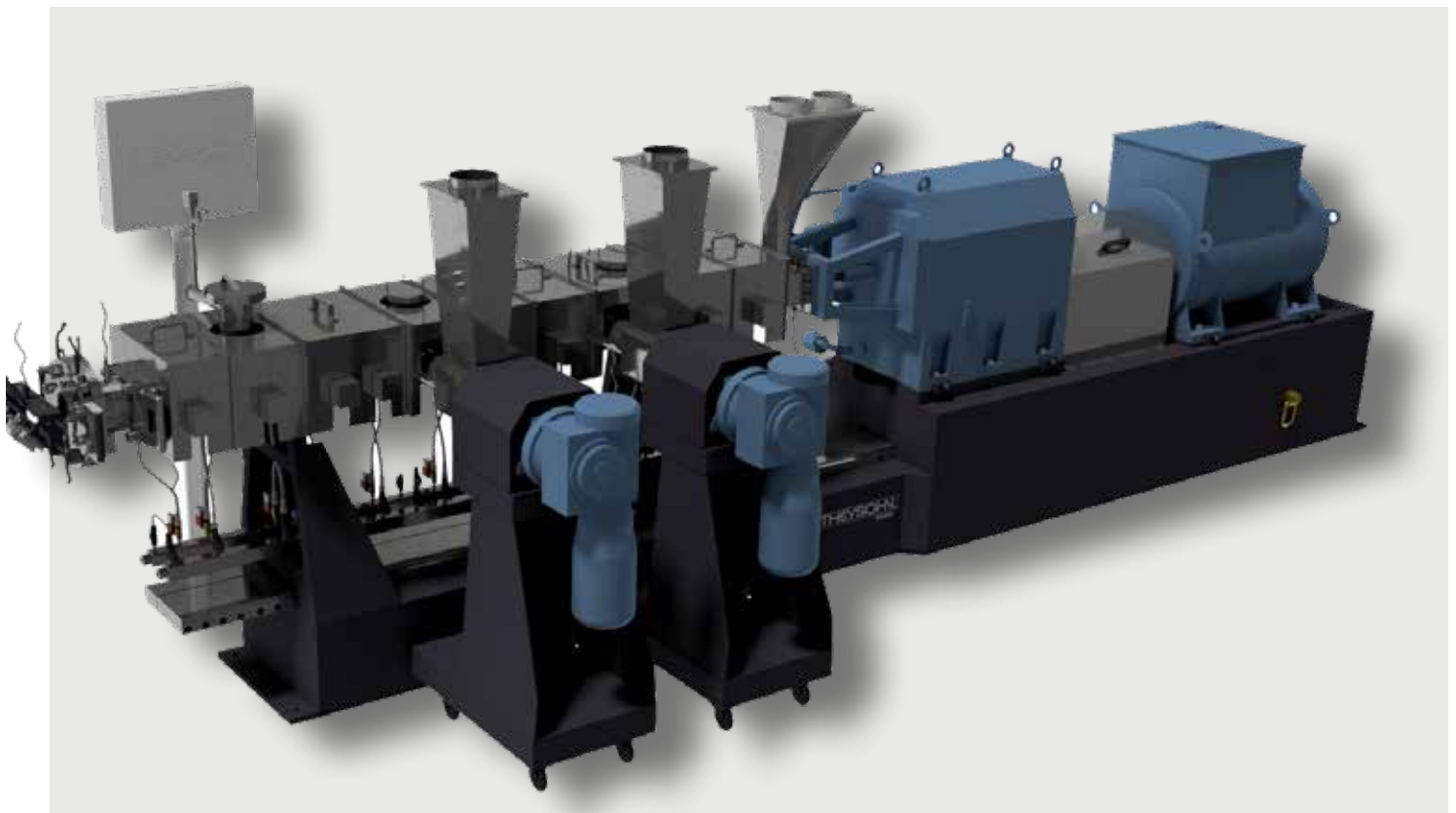
Highest free volume.

TSK-HV, the high-volume extruder from Theysohn - with a diameter ratio of Do/Di 1.83 it is ideal for products with a light bulk weight and low energy requirement, as well as for shear-sensitive materials.

The large free volume guarantees an extra advantage in output for bulky products and provides with added value due to an extended processing window.

The TSK-HV provides the largest-possible added value due to the plus in output with an extended processing window.

The Theysohn TSK-HV Compounder is based on the successful TSK Compounder series and impresses with its excellent process design allowing it to be used for all compounding tasks.



FEATURES

- Screw diameter 20 – 212 mm, up to 80D
- Torque up to 13,7 Nm/cm³, screw speed up to 1200 min⁻¹
- Modular, segmented design of barrel sections and screw elements for maximum flexibility
- Excellent long-life cycle due to abrasion, adhesive and corrosion resistant materials
- Intensive cooling of extruder barrels by optimized cooling system, also at high screw speed
- Energy efficient design by state-of-the-art gear boxes and heaters
- State-of-the-art control concepts and equipment

APPLICATIONS

- Filled and reinforced plastics
- Production of color masterbatch, coloring of polyolefins
- Cable compounds
- PVC compounds
- Hotmelt
- Alloying of compounds
- Degassing tasks
- Applications in the area of reactive extrusion
- Starch, Cereals
- Food and non food extrusion
- Recycling
- Other applications

Twin-Screw Extruder TSK PCE

With the TSK-PCE co-rotating twin-screw extruder, Theysohn offers an exclusive compounder with a horizontally separated process part.

The process part is opened by means of a spindle drive and guarantees quick access to the twin-screws. This significantly reduces cleaning times, plus the process can be directly sampled due to the exposed screws.

The TSK-PCE is able to process a wide range of recipes. The opening process part is ideal for battery masses, powder coating recipes or adhesives.



FEATURES

- Screw diameter 20 – 130 mm, Do/Di 1,55 or HV design up to Do/Di 1,83
- Process part completely horizontal to open
- Quick access to twin-screws, removeable from above (less space)
- Quick cleaning, analysing of process performance when the process part is open
- Optional screw core cooling of screw shafts
- Fully intermeshing, self-cleaning, co-rotating screw elements
- Screw rotation speed up to 1200 min⁻¹
- Process length up to 70D

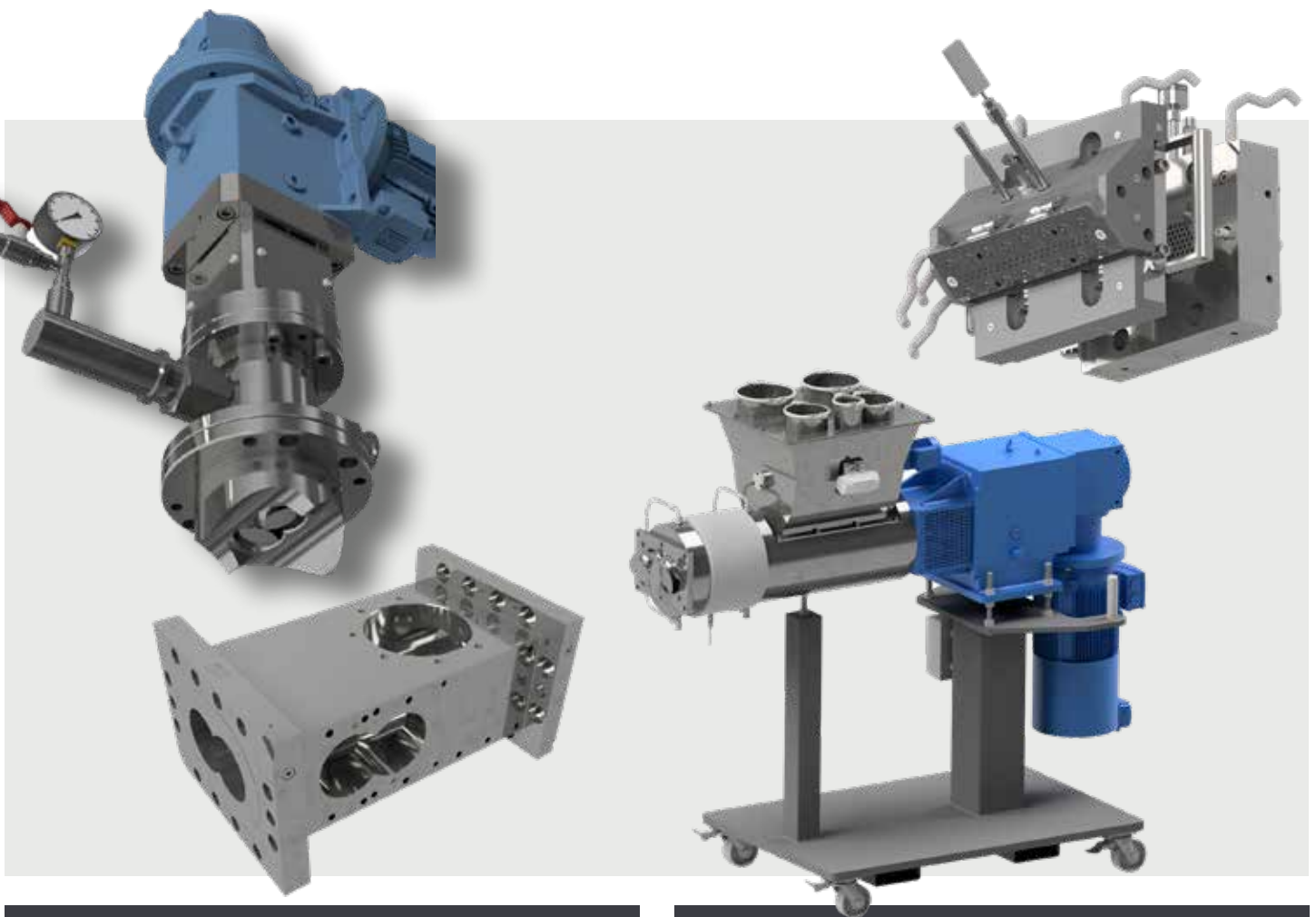
APPLICATION

- Hotmelt
- Powder coatings
- Food and ingredients application
- Calendering compounding
- Production of additive and color masterbatch
- Cable compounds
- Rubber compounds
- Degassing tasks
- Applications in the area of reactive extrusion
- Health and care
- Other applications

Equipment

The Theysohn portfolio of co-rotating twin-screw extruders is expanded with tried and tested auxiliary units that enrich the technically efficient overall concept.

Theysohn can modernise and optimise any brand of existing extrusion lines with our accessories.



SIDE-FEEDER TSD

The co-rotating, intermeshing side feeder makes it possible to feed granulate, powder, fillers and fibres in the TSK twin-screw extruder.

A large filling opening with a special feed geometry supports the safe feeding of material, and optimized screw geometry guarantees maximum material feeding and safe transport into the extruder.

Depending on the processing task, the side feeding can be heated, cooled or designed as its own control zone.

Well-proven materials guarantee the well-known long service life of Theysohn products, even under the toughest conditions.

DEGASSING UNITS TVS AND TDS

The problem is well-known and irritating. The compounder still has power reserves, but material is escaping through the atmospheric or vacuum degassing domes.

This can be remedied with a twin-screw hold-down device fastened to the side or on top of the extruder barrel. The co-rotating, intermeshing screws hold the melt in the extruder, enabling to expand the process window of the compound.

In addition, the degassing performance of the extruder is improved and the uncontrolled escape of powder, gas or melt to the working environment is prevented.

TSKASKADE UNITY

TSKaskade Unity

Save raw materials with new extrusion technology for secondary materials and high filler content in the extrusion – technology that inspires!

The TSKaskade Unity is a combination of co-rotating and counter-rotating twin-screw extruders for a variety of applications. The TSKaskade UNITY series was developed in particular due to the need for high-performance extruder systems. Top product quality and flexibility are achieved with the well-proven

and reliable modular process units. Through the combination of both extruder technologies, each individual system can make full use of its advantages, making it possible to achieve previously unattainable added value.

Theysohn in-line system technologies complete the material cycle, permitting significant cost savings, among other benefits. Theysohn achieves this for example at PVC recycling secondary raw materials in never before reached proportions of recycle and filler contents.

ADVANTAGES

- Complete technical separation of product infeed/plasticizing/dispersion/incorporation/degassing from the required pressure build-up, etc.
- Very high melting temperature reductions are possible due to barrel cooling and intensive screw shaft cooling
- Exact process control
- Elimination of pressure fluctuations and pressure pulsations => maximum conveyor rigidity guarantees constant product output
- Increase in throughput
- Improvement in product quality
- Continuous processes means low specific energy consumption
- Simple line start and less start-up material
- Savings in raw material

TASKS FOR CO-ROTATING EXTRUDER

- Product intake for granules, powder, flakes
- Plastification
- Atmospheric degassing of the melt
- Incorporation of filler and reinforcing materials
- Mixing/homogenization of the melt
- Vacuum degassing of the melt
- Pressure reduced transfer of the product

TASKS FOR DISCHARGE EXTRUDER

- Max. efficient product entry
- Reduction of the melt temperature
- Keeping constant the volume flow
- Pressure build-up for tools and downstream equipment
- Pulsation-free discharge

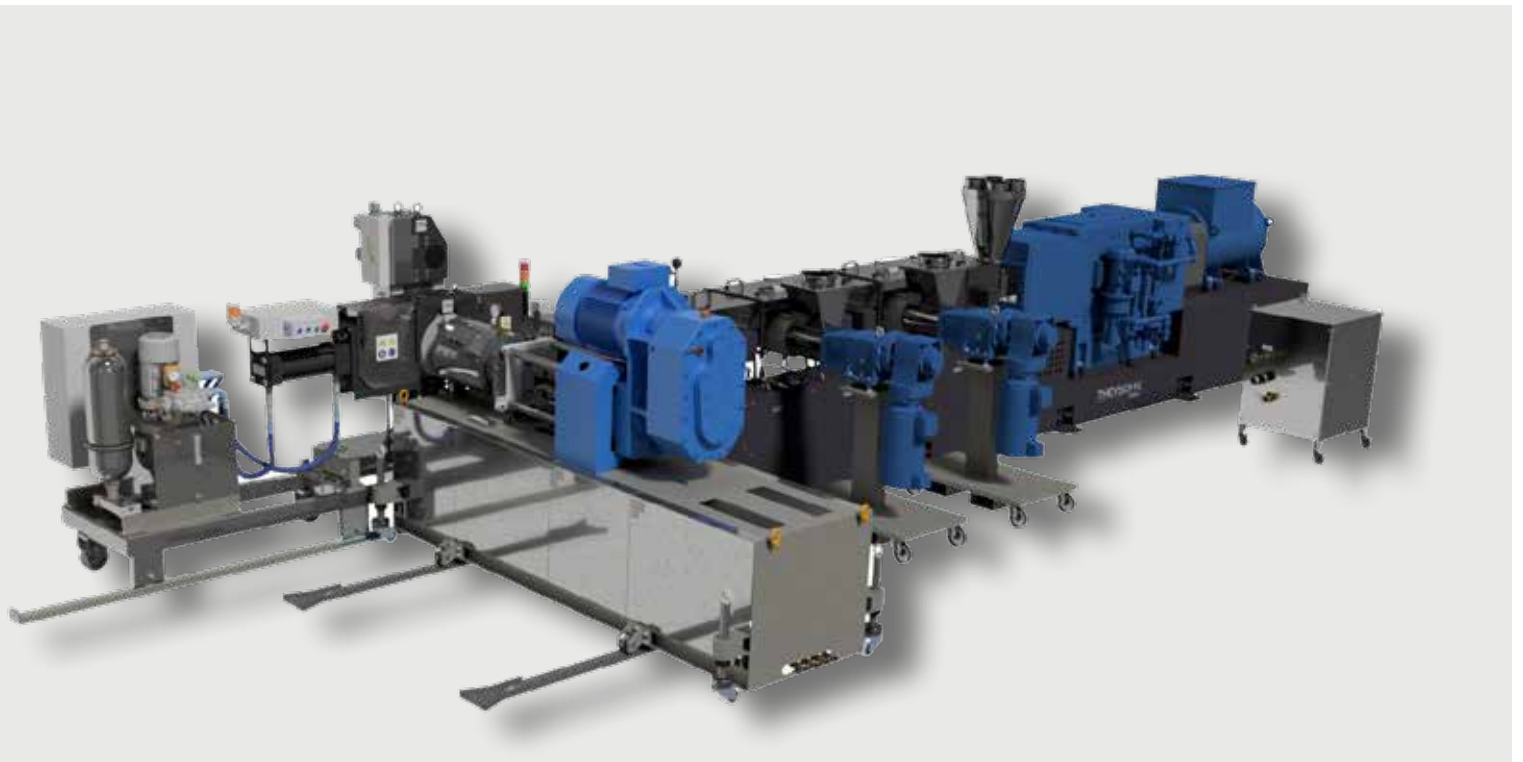
TASKS FOR CO-EXTRUDER

- Co-Extrusion inner- and outer layer (min. 0,5 mm)

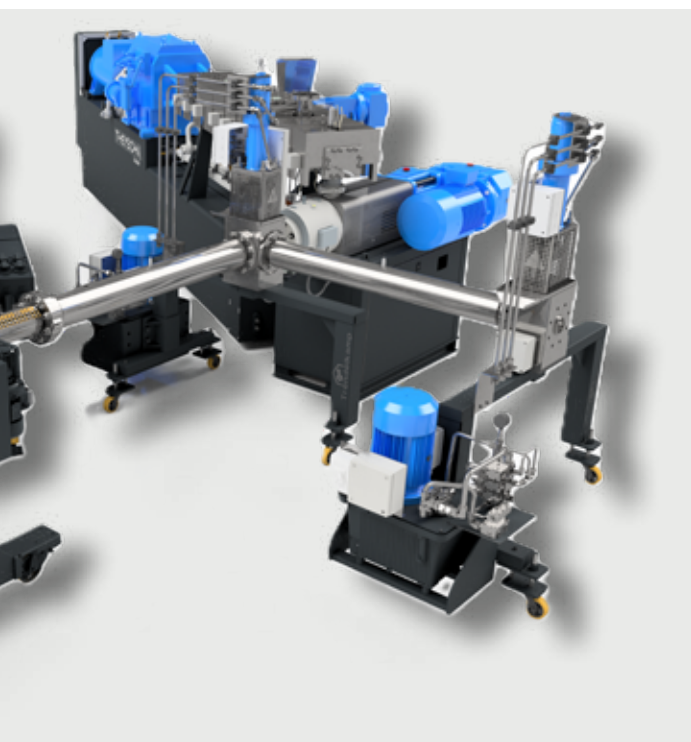
TASKS FOR RECYCLING



TECHNOLOGY THAT INSPIRES!



- Recycling from PVC and Polyolefine



„INLINE PROCESSES“ APPLICATION

- Polyolefine Multi layer pipe, max load CaCo3, BaSo4, TiO2
- PVC inline pipe extrusion (~1000 kg/h and higher)
- Calender loading
- Recycling profile
- Hotmelts
- Replacement of mixing systems to continuous processes
- Polyolefines sheets and profiles, high filled
- ABS, PC, PET sheets
- Rubber technology
- Roofing and floor sheet PVC, TPU, TPO

„PELLETIZING“ APPLICATION

- Masterbatch white, max. load CaCo3, BaSo4, TiO2
- TPE compounding
- Cable compounds (low, medium, high voltage)
- HFFR/Flame retardants
- Masterbatch black, max. load
- TPU, TPO, TPU reaction
- Cross linked polymers
- Food
- Polyolefines + WPC or Cellulosics, Rice, hemp
- PVC for medical technology
- Soft and hard PVC
- PVC, max load CaCo3

Screws

THEYSOHN - a partner with expertise.

Screws are designed and manufactured by Theysohn in a variety of designs to fit in plastic machinery, plastic processes as well as chemical and food industry and are tailor made to meet individual application needs, if necessary. Both the „conical“ and „parallel“ type can be coated with a variety of materials to reduce wear and extend the lifetime of the screws.

The experience and capability of Theysohn are particularly well known for the production of all forms and types of screws.

The most complicated geometries can be realised directly and quickly with the CNC programming integrated into the production process. Computer-aided production preparation ensures high flexibility.



FEATURES

In many extrusion applications, long-term nitrided twin-screws are the standard design.

If the requirements are high, the flights are coated. Molybdenum coatings from THEYSOHN have proven to have particularly good sliding and emergency running properties.

In other applications, plasma-welded wear protection coatings made of stellite, Ni/C-based alloys and specially developed and modified tungsten carbide alloys are used.

Screw coatings:

Plasma coated flights Stellite 1/6/12/20/21, Colmonoy 50/56 u.a.

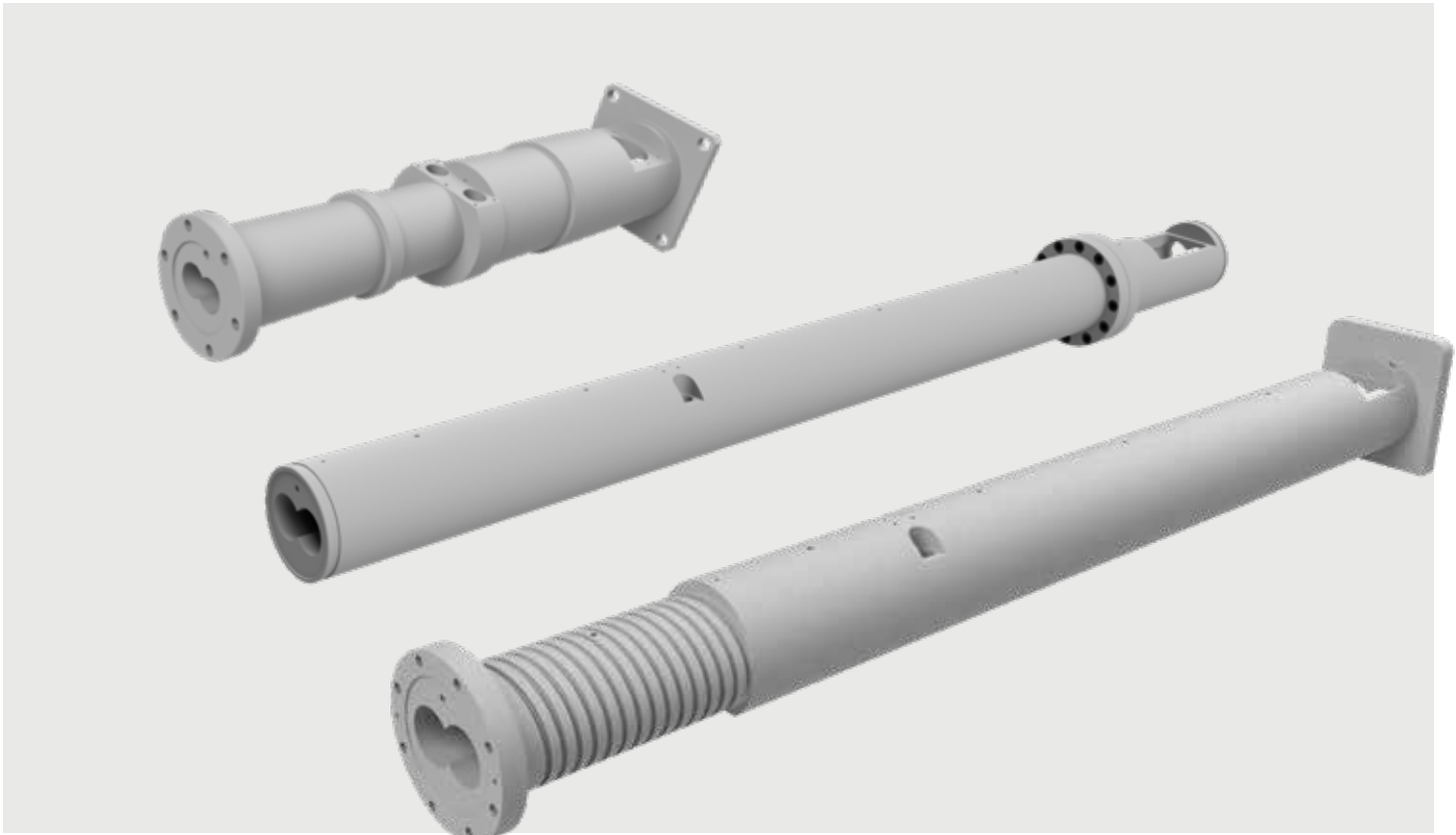
Plasma sprayed flights Mo/WC/MoNi and others

Barrels

THEYSOHN's own special machines have been developed for deep drilling and for honing in conical barrel bores.

The machining techniques, combined with the appropriate materials and the experience of our qualified team, ensure the highest dimensional accuracy. Long-term nitriding to great depth gives barrels good wear resistance. Barrels with exchangeable bimetal liners are offered for increased requirements.

- Single-screw barrels: Long-term gas-nitrided, bimetal T5000 and T8000, HIP, Hastelloy
- Twin-screw barrels: Long-term gas-nitrided, bimetal T5000 and T8000



FEATURES

All barrels for parallel and conical screws are manufactured from high quality nitrided steel. A very high even hardening depth as well as ground or honed bores guarantee a long lifetime. For difficult applications barrels can be made of special steel. Lined barrel in T5000 execution together with Mo-coated screws or T8000 with Wolfram carbid coated screws for longer life time are available.

Barrel sections and screw shafts

THEYSOHN Salzgitter supplies barrel sections and screw shafts for compounders.

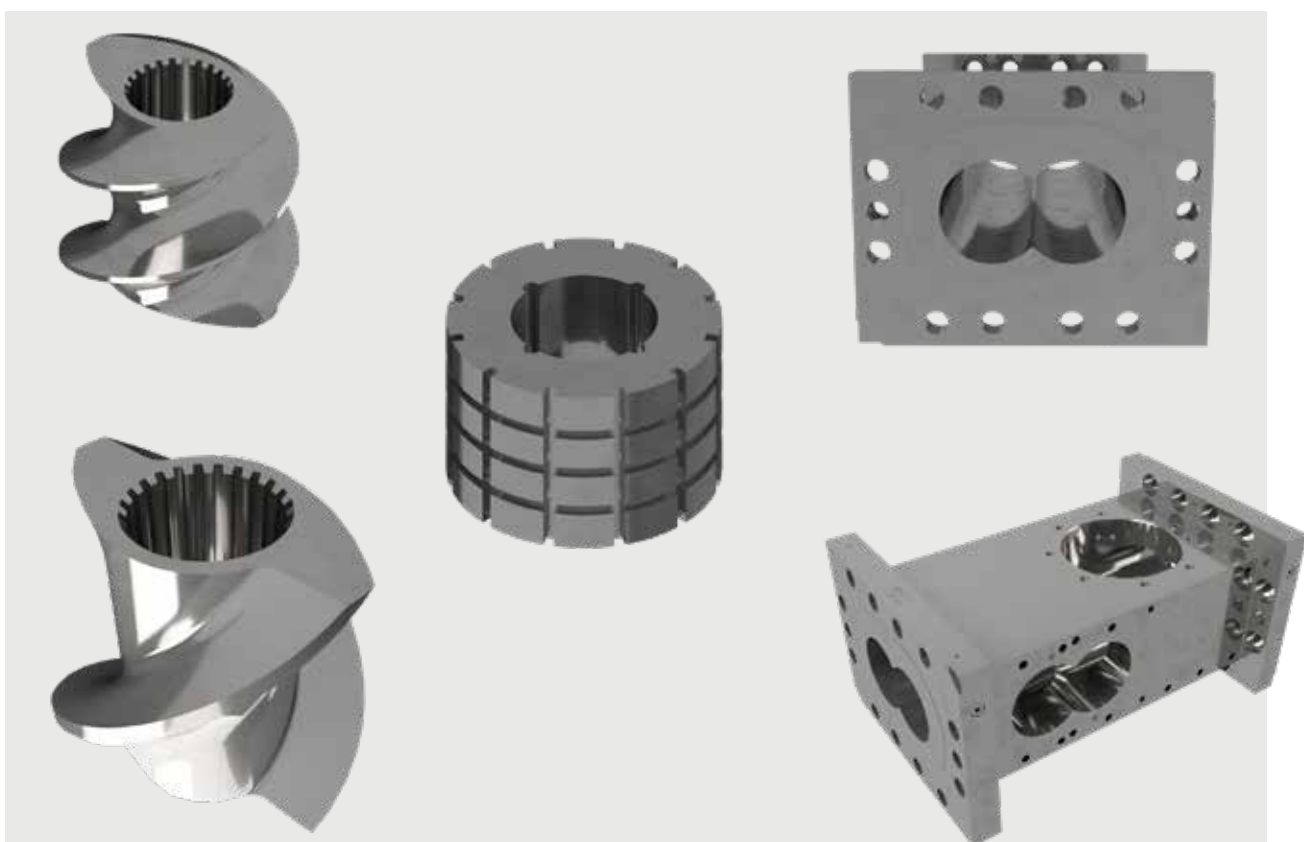
In the standard version, the barrel sections are made of nitrided steel and are nitrided to a great depth.

Casings with replaceable wear sleeves made of through-hardened special steel offer great resistance to abrasive wear that occurs when processing plastics with additives.

In case of corrosive wear behaviour, sleeves are made of through-hardened, rust- and acid-resistant steels.

When extreme wear resistance is necessary, the barrels are made in a hipped fabrication using powdered metallic raw materials..

Screw shafts made of quenched and tempered steels ensure perfect transmission of the required torques.



THEYSOHN SUPPLIES THE FOLLOWING PRODUCTS:

- Screws for extruders and injection molding machines
- Parallel and conical twin-screws and barrels
- Single screws and barrels
- Bimetal barrels for single and twin-screws
- Casings and screw shafts for compounding extruders
- Rebuilding of screws, barrels and casing
- Precision parts for the machinery industry
- Refinishing: deep boring, honing, turning, abrading, welding of long distances, parallel & conical

Refurbish

The THEYSOHN system can be used for all process units available on the market and sets new standards in terms of price and performance.

The THEYSOHN repair system allows all used and worn barrels to be reconditioned by means of a special spindle process, guaranteeing compliance with the technical conditions in order to subsequently fit high-quality bimetallic liners in a professional manner.

The THEYSOHN system guarantees the possibility of replacing the bimetallic liners at any time, offering short delivery times with degressive pricing.

By arrangement, our customers can send screws and barrels to the Salzgitter factory to have them reconditioned or to optimise geometries.



FEATURES

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QUALITY

The quality of Theysohn products is subject to internal quality control standards as well as to the quality management system DIN ISO 9001:2000. By controls of the staff, all manufacturing steps are continuously checked. Before products leave the plant, they are subject to final quality control procedures. This is how we can guarantee quality at the highest level.

Quality products from Theysohn improve the processing of plastics.

QUALITATIVE

We want to achieve more together by committing to consistent quality. All Theysohn products are 100% made in Germany and are ISO 9001: 2015 certified. Our plastics processing is continuously monitored through self-checks by employees, making it safer.

INNOVATIVE

We want to achieve more together by accepting the challenges of the future and setting the performance of the best as the benchmark for our work. No obstacle should slow us down, but rather bring us further.

CUSTOMER ORIENTED

With us, the customers are at the center of our thoughts and actions. We offer solutions that are tailored to you and that can lead your company to sustainable success. The personal wishes and requirements of the customer flow into our work.

NOT ONLY MAKERS, BUT MASTERS!

Many companies claim they can build perfect components for extrusion lines, but what about the perfect interaction of these components operating as a whole?

THEYSOHN understands the entire extrusion process technology, and aligns the individual components to precisely harmonize with each other. THEYSOHN relies upon its longstanding experience in extrusion technology and on the basis of its competence centers, THEYSOHN has the expertise required to support customers in designing and building complete production lines and in taking full responsibility on the customers behalf.

THEYSOHN provides the customer comprehensive support and can also deliver turnkey facilities, whether needs involve engineered plastics, masterbatch, thermoplastic elastomers, food extrusion or powder coatings.

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