Company profile
FEDDEM GmbH & Co. KG

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Member of the Feddersen Group

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09/2025

FEDDEM
COMPOUNDING LINES

Expertise in engineering

FEDDEM GmbH & Co. KG belongs to the internationally active Feddersen Group based in Hamburg. In the last few decades, it has placed a strong focus on engineering plastics.

Along with Feddersen GmbH & Co. KG, specialist in the distribution and market development of engineering plastics, and AKRO-PLASTIC GmbH, specialised in innovative and application-oriented plastic compounds, mechanical engineering was added to the plastics expertise of the Feddersen Group with the continuation of Decroupet Maschinenbau's "Construction of Extrusion and Compounding Lines" division, which is based in Sinzig, Germany. Founded in 2009, FEDDEM's workforce boasts more than 30 years of professional expertise in the development, design and construction of co-rotating twin-screw extruders as well as the manufacture of key components for renowned extruder manufacturers.

The versatile compounding lines for the production of high-quality engineering plastics and masterbatches are manufactured and assembled entirely in Sinzig – quality "Made in Germany!" Leading compounders rely on our know-how for the production of their high-performance compounds.

FEDDEM is not only focusing on the sale of machines from its standard range, but also offers tailor-made solutions as well as project enginering and supply of turnkey lines, including peripheral equipment, worldwide.

FEDDEM's full range of services covers on-site trouble shooting and repairs, flexible spare parts supply and factory overhaul of used extruders.

The Feddersen Group

Origin

1949 Founding of the chemical trading company K.D. Feddersen & Co. by Karl Detlef Feddersen.

Structure

Shares in the companies of the Feddersen Group are held by K.D. Feddersen Holding GmbH. The sole shareholder of the holding is the non-profit K.D. Feddersen Foundation, which operates a retirement home in Hamburg.

Areas of expertise

The Group companies concentrate on the worldwide distribution of raw materials, chemicals and engineering products. In addition to export trade with its own branches in Asia Pacific and Latin America, our companies are engaged in plastics distribution in Europe and Asia, development and production of plastic compounds, offer services for integrated product development, simulation and calculation, and also operate in stainless steel trade and in mechanical engineering.

This is what we stand for

Customer orientation

We act with you in mind. We cultivate personal contacts. We listen, in order to fully understand your needs and requirements. We are a reliable team of mechanical engineering enthusiasts, whose objective is to build a partnership with you for years to come. We offer you the special engineering solution. We are there when you need us.

Solution orientation

We plan with your needs in mind. When you want to solve an extrusion problem – we are there. Global corporations and small enterprises with high demands have relied on our know-how for many years. As engineering pros, we will personally assist you through all project and development phases. As machine builders, we offer you the best solution – turnkey production equipment with maximum efficiency for optimal product quality.

Performance orientation

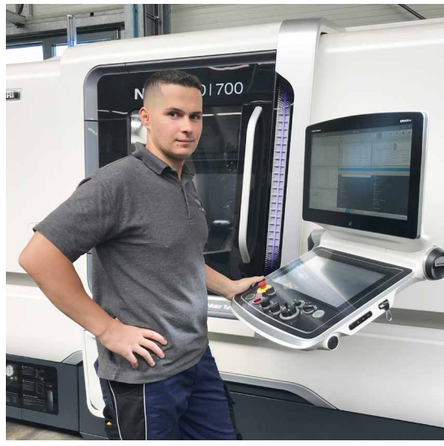
We demand performance. Whether it is for 4 kg or 4 t per hour: FEDDEM lines for high-end or commodity compounds are equipped to be wear-resistant, matching the requirements, durable, user-friendly and efficient. With FEDDEM lines, you will achieve the best product quality with remarkable throughputs. Rely on the guaranteed characteristics of FEDDEM lines at every production stage and on our personal service when you need it.

Technology orientation

We think ahead. We develop and maintain core technologies in-house – such as our unique gentle compounding process in co-rotating twin-screw extruders. In our pilot plant, we are continuously working on the further development of screw elements and barrels, material combinations or on bringing innovations such as our patent pending curved die plate, which has up to 25 % more holes in a row, to market. Discover new possibilities with FEDDEM.

Quality orientation

We live quality. Our skilled workforce boasts more than 30 years professional expertise. FEDDEM lines enable you to produce compounds that comply with all current QM requirements. Of course, we are also certified to the international QM standard DIN ISO 9001 2015. "FEDDEM-Excellence" – our integrated management system – ensures the highest quality in all our company's operational procedures. We build on the competence of our employees. Social responsibility and the passing on of our knowledge to younger generations are key elements of our company culture.



Product portfolio

The core of our expertise lies in co-rotating, intermeshing twin-screw extruders of the type FED-MT (MT = Multi Task). MT stands for the diversity of applications for which the extruder can be used and for quick change-overs from one product to another. We demand performance: The MTS model range is specially designed to meet the requirements of compounding engineering plastics, masterbatches and special applications.

Screw diameters of 18 to 82 mm and a product-dependent through-put of 4 kg up to 4 tonnes per hour are available. With FEDDEM's production plants, you can achieve the highest product quality with optimised material throughput. And you can rely on the guaranteed properties of FEDDEM systems and our personal service whenever you need it.

FEDDEM's standard MTS range offers sizes between 18 and 82 mm, while extruders with a larger Do/Di and a screw diameter up to 135 mm are also available.

FED 18 MTS

Ø Screw:	18 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	10 kW

FED 26 MTS

Ø Screw:	26 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	34 kW

FED 37 MTS

Ø Screw:	37 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	85 kW

FED 43 MTS

Ø Screw:	43 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	157 kW

FED 52 MTS

Ø Screw:	52 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	312 kW

FED 72 MTS

Ø Screw:	72 mm
Speed max.:	1,200 min^{-1}
Drive power max.:	830 kW

FED 82 MTS

Ø Screw:	82 mm
Speed max.:	900 min^{-1}
Drive power max.:	1,000 kW

FSV

FSB

FSB-V

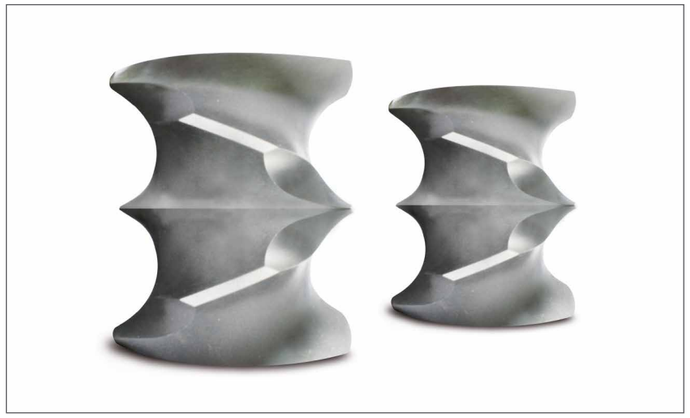
The extruder's processing section is one of the key components with the option of laterally mounting twin-screw side feeders (FSB), twin-screw side vacuum (FSV) or a device for twin-screw side venting (FSE).

When incorporating additives with a low bulk density, an FSB-V side feeder with vacuum support is used, which removes air from the metered side stream before it enters the processing section and can thus increase the throughput of the system several times over. FSB-V side feeders are also available for retrofitting extruders from other manufacturers.

Machine technology

FEDDEM is your expert partner for the development, design and construction of extrusion and compounding lines. With over 30 years of experience, we offer you everything from standardised products to fully customised solutions for your production needs.

We are a reliable team of mechanical engineering enthusiasts who want to provide you with the perfect technical solution and who place great value on details.



Screws

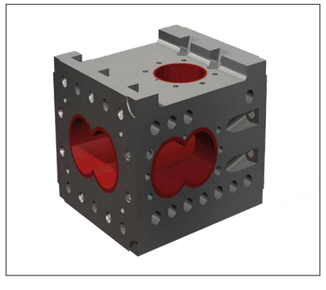
- FEDDEM screw profiles are intermeshing and co-rotating.
- The FED MTS series is based on the worldwide proven diameter ratio Do/Di = 1.55. If required, profiles with a larger/smaller diameter ratio are also available.

Barrels

- With the arrangement of the cooling channels, which run prallel to the heating cartridges, we achieve simplified access when cleaning the holes during maintenance of the cooling system, thus reducing downtime.

Wear protection

- All open parts in the extruder barrel can be equipped with seamless wear protection.
- The wear protection layer consists metallurgies, which are applied via the HIP process (hot isostatic pressing) and protects against abrasion, corrosion or both, depending on the selection.
- You get the best possible heat transfer when heating and cooling the product due to the close connection between the protective layer and the barrel.
- The screw elements are made from materials that offer protection against abrasion and/or corrosion.
- Careful pairing of the barrel's wear protection and the screw element's metallurgy allows for extended lifetime of the extruder's processing section.



Cleanliness

- In the FED MTS series, you will find a harmony of design and function.
- Heat-insulated segmented covers along the processing section protect the operator against unintentional contact with hot surfaces. For access to the processing section these covers can easily be removed manually without the need for tools.
- The heat insulation of the cover segments substantially reduces the emission of heat from the process part into the production environment. This positively impacts the energy balance of the process section and at the same time, it reduces the physical load on the operating staff on hot days.
- The smooth and closed surfaces are easy to clean.
- Covers prevent deposits on the process section and the associated supply cables, pipes and hoses.
- The discharge end of the machine frame and at the die head are free from electrical sockets and hanging cables. This prevents hot melt strands from soiling these components.

Process technology

See for yourself the superior quality offered by the original – multi-task process units with short, flexible design (specific barrel length L/D = 3.5) and kneading-block-free screw geometries with special FEDDEM mixing elements (FME). For high-filled products extruders with higher screw volume and longer process lengths are available.

Kneading-block-free screws

- FEDDEM FME mixing elements expand the application range of screw configurations. For engineering plastics, numerous formulations can be compounded with a single screw configuration.

Compact strand die heads

- FEDDEM FSK strand die heads are compact and easy to operate.
- Electrical supply lines to the heaters and cables to the melt sensors are concealed for protection against accidental damage.
- It is possible to pull out the extruder screws without dismantling the melt sensor.

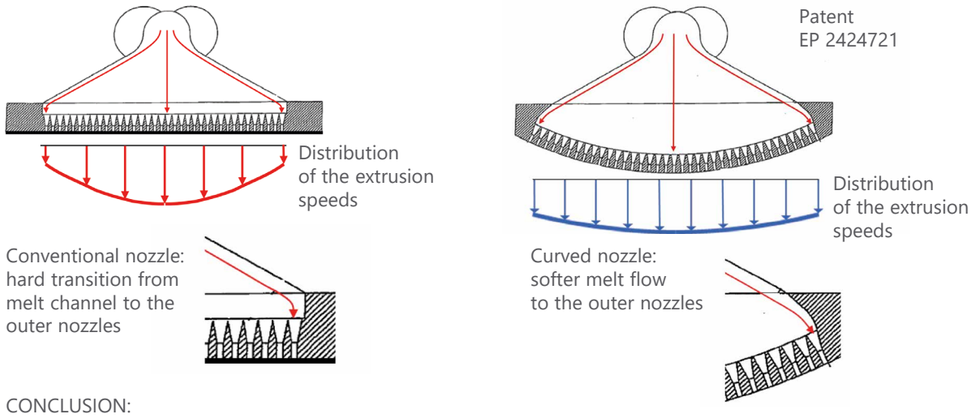
- FEDDEM FSK strand die heads are available for retrofitting of extruders of other manufacturers.

FEDDEM curved die plate

- The patented FEDDEM curved die plate is employed in special applications (patent No. EP 2424721).
- While keeping the same die width the number of the die holes can be increased by up to 25 % without changing the hole diameter or the distance between die holes a second row of holes is avoided.

Design details of the curved die plate

Curved die plate relaxes the melt flow pattern at the outer die nozzles.



CONCLUSION:
The curved die plate evens the speed profile of the melt flow through the nozzles in the middle of the die plate to the outer die nozzles.

Flexibility

With FEDDEM extruders and related auxiliary equipment, you can customise your production process for flexibility and cost-efficiency.

Processing length

- The FEDDEM extension unit (e.g. 10 L/D long) allows for easy modification of an extruder's length to match the requirements of an individual process. Changing the processing lengths just takes a few hours. This offers the option of adapting the processing length of an extruder from a compounding application to large-volume venting / degassing or to reaction processing.
- Subsequent retrofitting of FEDDEM extruders to a longer processing length is an option and entails substantially lower investment costs compared to sourcing an additional extruder.

Plant control

- FEDDEM offers reliable controls of line components with optimised management of drives and temperature zones as well as controlling up- and downstream equipment.
- A user friendly interface supports intuitive operation of the line, recording of process data and management of recipes.
- The line controls can gradually be expanded from managing a stand-alone extrusion line up to full communication with the customer's ERP system. Integration into Industry 4.0 concepts as well as remote servicing via internet connection or phone line is available.

Robust continuous operation

- FEDDEM offers a range of auxiliary devices for ensuring smooth continuous performance of feed and degassing openings in the processing section. These devices are equipped with twin-screw discharges and frequency-controlled drives. Various speeds and screw pitches as well as a selection of metallurgies for abrasion and/or corrosion resistance allow to adapt these devices to individual process requirements.
- FSB side feeders ensures uniform delivery of a metered stream of additives, fillers or reinforcing materials into the process.
- The FSV side vacuum degassing unit prevents extraction of product through the vent port in vacuum-sensitive degassing processes. It keeps the degassing opening in the processing section reliably and permanently open.
- The FSE side venting unit is a process relevant component that is only available from FEDDEM. It supports atmospheric venting when feeding fillers of low bulk density and reduces the exit of dust through the vent part. The unit can easily be converted for use as a side feeder.
- For some fillers with low bulk density, the FSB-V unit can increase the throughput of the compounding plant up to three times.
- FEDDEM was the first machine manufacturer to design convertible versions of the FSB, FSV and FSE units and supply them with optional conversion kits as early as 2012.

Service

FEDDEM offers a wide range of services. Our after-sales service team supports you with all questions concerning your compounding line. Benefit from comprehensive technical support throughout all phases of your plant construction, right down to the smallest delivery of spare parts.

Remote maintenance and emergency service

- During the warranty period, we provide troubleshooting support around the clock (24/7 phone service) in order to minimise downtimes and to ensure high machine availability. This service is also available as an option after the warranty period.
- If desired, you can conclude a preventive maintenance contract with us or request our service when needed. FEDDEM builds on the implementation of a remote maintenance concept that enables fast remote assistance in the event of malfunctions and visually self-guiding instructions for the operation and maintenance of system components via „augmented reality".

Wear and spare parts

- We keep a constant stock of a wide range of the most important spare parts.
- We manufacture customised special components in our own extensively equipped production facility.

Pilot plant

- In our pilot plant, we are happy to demonstrate to you the performance of our FEDDEM extruders.
- We can perform practical tests for you on extruder sizes 18 to 82 mm and present to you the reference values for your application.

Wear measurements

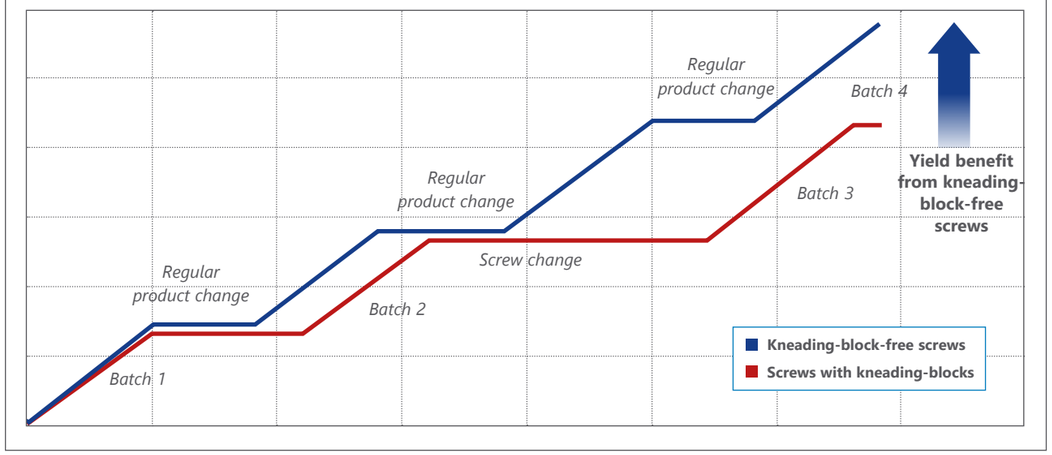
- We measure barrels and screws, document the measurement results and recommend measures for overhaul.
- We also offer this service for other extruder brands.

Efficiency and quality

FEDDEM extruders are designed and built for high efficiency. The flexibility in plant application and the reduction of downtimes allow high yields in daily production.

- FEDDEM extruders with the multi-task process unit and kneading block-free screws often allow a product change without having to convert the extruder.
- When compounding engineering plastics, it is hardly necessary to change screws. This reduces down-times and guarantees an availability of the line.
- With the use of multiple FEDDEM production lines of different sizes, the same product quality can be produced on the individual machines – regardless of the size of the relevant extruder. This increases flexibility of production planning significantly.
- The good comparability of the product quality achieved with extruders of different sizes allows a high success rate of extrapolations in scale-up and scale-down projects.

Benefit of quick product change



- With the FEDDEM Excellence quality management system, we ensure that the system, process and product quality in our company are tested and continuously improved. This also means a permanent improvement in the determination and realisation of customer requirements. We focus on high-quality products and operate according to you requirements at all times. All FEDDEM employees feel obliged to provide maximum customer satisfaction.
- Outstanding quality, satisfied customers, a corporate management policy of environmental stewardship and a healthy work environment for our employees – these are the commitments we do business. In this way, we ensure the long-term economic success of our company and therefore also the success of our customers.
- We offer extensive application expertise and high-quality service, which are tailored to your needs at the most competitive prices.

CERTIFICATE

dqs

This is to certify that

FEDDEM COMPOUNDING LINES

FEDDEM GmbH & Co. KG

Mesalliweg 19
53489 Sinzig
Germany

has implemented and maintains a Quality Management System.

Scope:
Development and manufacture of extrusion and compounding lines, trading of associated spare parts as well as rendering of services in the field of extrusion and compounding technology

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	50021012QM15
Valid from	2023-12-20
Valid until	2026-12-19
Date of certification	2023-11-01

DQS GmbH

Christian Gerling
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
No validity of this certificate can only be verified by the DQS-seals.

FEDDEM is certified according to ISO 9001 : 2015

ICX® Technology

Regardless of the production site

- FEDDEM extrusion lines can be combined with all conventional upstream and downstream units as per customer requirements.
- If there are no customer preferences in relation to materials conveyance, dosing system and pelletising, we recommend our ICX® machine concept.
- The standardised machine concept ICX® (Innovative Compounding and Extrusion technology) is a joint development with our sister company AKRO-PLASTIC, which is specialised in the manufacture of high-quality engineering plastics.
- Increasing pressure on order processing times, consistent product quality, growing product variety and global availability of compounds at competitive prices have led to our development of a flexible production concept for locations all over the world.
- With the ICX® concept, it is possible to produce at the highest level of quality while maintaining low rejection rates – even with locations in multiple continents.

Highsun AKRO Engineering Materials (Changzhou) Co., Ltd., Joint Venture

Niederzissen (DE)

Capacity:
>120,000 tonnes per year
28 extruder

Changzhou (CN)

Capacity:
Around 20,000 tonnes per year
5 extruder

Itupeva (BR)

Capacity:
Around 15,000 tonnes per year
4 extruder

Working methods and maxima

ICX® Technology

Innovative compounding and extrusion technology

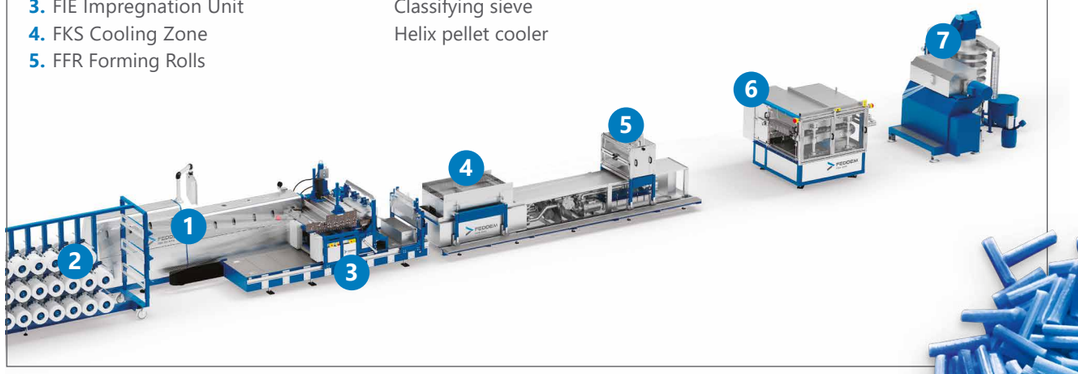
$$\text{Customer value } (CV) = \frac{\text{Quality } (Q) \cdot \text{Flexibility } (F)}{\text{Price } (P) \cdot \text{Time } (T)} \mathrel{\hat{=}} \text{Investments}$$

Complete plants

Extrusion and compounding lines for top performance

Joining forces to get ahead – we rely on the competence of our experienced project and process engineers as well as our cooperation partners for our success. Thanks to many years of trusting cooperation with our technical partners, we can offer you tailor-made solutions you can rely on for the planning and construction of turn-key plants.

LFT pultrusion technology for the highest demands

- Efficient production
- Superb mechanical material properties
- Ultimate flexibility
- Modular design

1. FED-MTS Twin-Screw Extruder
2. Creel
3. FIE Impregnation Unit
4. FKS Cooling Zone
5. FFR Forming Rolls
6. FBA Band Puller
7. Pelletiser
Classifying sieve
Helix pellet cooler