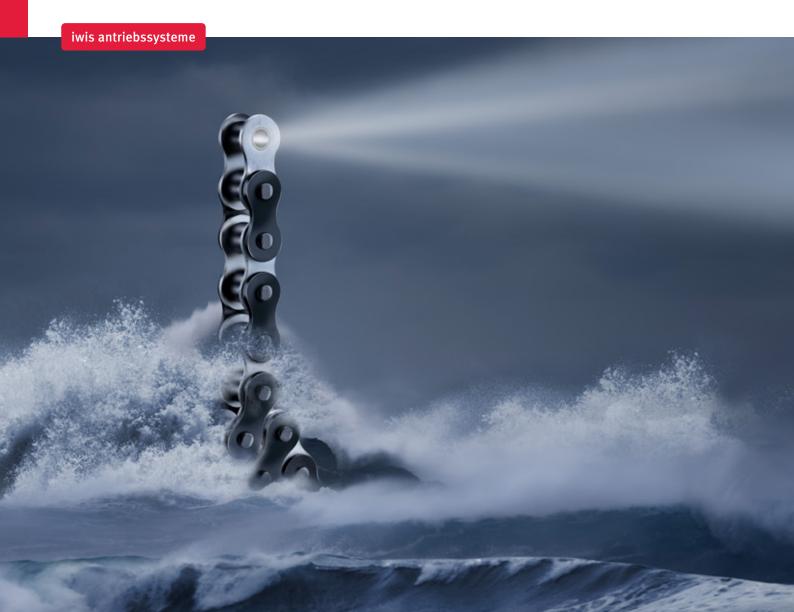
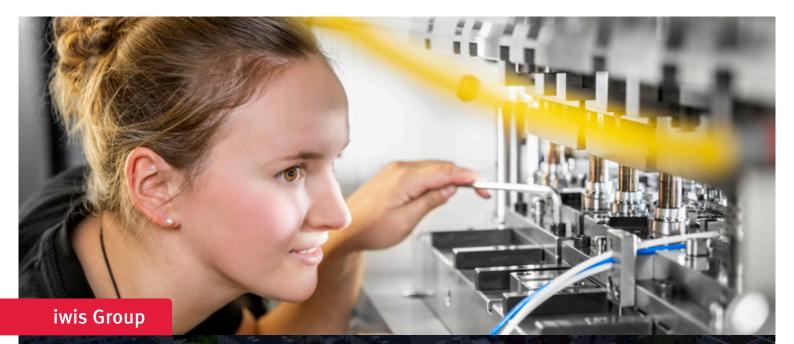
Successful together!

It's what makes us strong







As a **global technology leader** in its areas of expertise, iwis has been manufacturing top-quality products in outstanding precision for over 100 years.



iwis — precision, innovation and passion

Our many years of experience have helped to make iwis what it is today: an international technology group providing top-quality products and services.

Our multifaceted portfolio extends from innovative, high-performance chain drive systems through to electrical plug connector technology. Our technology is present worldwide and can be found in sectors such as the automotive industry, the food and packaging industry, logistics and conveyors, healthcare, medical engineering, agricultural machinery and many other industries and applications.

Divisions of the iwis Group



iwis mobility systems Timing drives, camshaft drives, mass balancing and oil pump drives for the automotive industry



iwis antriebssysteme Precision chains, sprockets and chain tensioners for drive and conveyor technology, together with technical services for industrial drive technology Mechatronic



iwis mechatronics

High-precision metalworking, stamping and bending technology, in particular in the area of electrical connection technology, press-fit technology, IDC insulation displacement connectors and MCS contact technology

In numbers

Sometimes, numbers say more than words. We are constantly striving forwards to stay ahead of the game and remain innovative. After all, we cannot predict the future – but we can help to shape it and turn visions into reality: **the iwis way!**

ma^t a



i>3000

employees



🚔 1,400 m

The longest single conveying distance for which iwis has ever supplied a chain. It is still in use on a car body production line.

The **largest** iwis chain has a pitch

The **smallest** pitch of **4** any iwis chain is a mere

60,000,000

individual parts produced **per day**

800,000 m

300,0

مt the Munich plant each year

chain variants

95,500

in the **JVIS**[®] portfolio

product brands

for specific applications

R&D

test rigs



pulsators



chain technology engineers across the globe



5

Why iwis?

Development

- Dynamic simulation/analysis of chain drive systems with regard to chain load, torsional vibrations and friction losses
- FEM analysis of individual chain drive parts and simulation including multi-body simulation
- Testing of new materials, lubricants and manufacturing methods
- Regular testing of chain wear elongation behaviour on more than 20 testing rigs
- More than 25 pulsers are available for testing dynamic fatigue strength according to different testing methods up to 250 kN.
- Evaluation of chain breaking strength and elongation up to 1000 kN
- Application-specific test rigs

Engineering support

- Continuous engineering support
- Our own iwis laboratory is equipped to carry out many different forms of testing, including microscopy, metallography, evaluation of mechanical properties, chemical composition and qualified analysis of data
- Customer-specific chain configurations for various chain applications
- Lifetime calculation of chains using iwis InduKet as a service or for use by the customer
- Training on chain design/calculation and general chain technology topics
- CAD data support
- Prototype production (e.g. 3D printing)

Quality

- Significantly longer service life
- Very good wear resistance
- Significantly higher breaking load than the standard
- High fatigue strength
- All iwis chains are pre-stretched
- Highly effective initial lubrication
- ISO 9001 accreditation
- Constant improvement of process reliability and efficiency
- Implementation of new manufacturing methods
- In-house development of production machines and tools
- Use of a variety of coating procedures and lubricants



Chain optimization process

- Feasibility studies in consultation with customers (including on-site)
- Design and modification of customer-specific attachments
- Analysis of custom chain configurations
- Industry 4.0 chain condition monitoring tools
- Consulting regarding different environmental influences to increase chain service life
- Consulting and implementation in relation to additive manufacturing technologies for optimizing the cost efficiency of your chain application

Service

- Technical webinars
- Chain Innovation Days events
- Online chain finder tool
- In-House training courses
- Technical consulting
- Online inquiry forms for quick responses
- Chain design
- CAD downloads
- Online shop
- Chain design
- Chain calculation program
- Online availability check

Worldwide presence

- Worldwide sales and support teams
- Competent field service and distribution partners
- Dedicated customer service support worldwide
- Key account managers
- Segment managers for specific sectors of industry
- Own production plants in Europe and Asia



When dimensioning a chain, all relevant factors must be considered to determine the chain's mechanical service life. There are three significant factors that determine the operational characteristics of the chains: the tensile strength, the wear resistance and the fatigue strength.



Tensile strength

Definition

If the load on a chain is increased until the chain breaks, this load is called "breaking load" and the breakage that occurs in this case is a forced breakage.

Testing method

The breaking load is determined by iwis on a universal testing machine. A chain is clamped at both ends in a tensile test and pulled apart. The breaking load is the force required to break the chain. Caution: The minimum breaking load is not the permissible operating load. This should be considered when dimensioning the chain.

What makes iwis chains special?

- Application-specific chain design The consideration of drive-specific, static and dynamic factors when designing a chain drive
- Chain dimensioning

Optimum design and selection of individual parts for the overall structure of the chain

• Material

Selection and inspection of the material type and quality of the individual materials and the heat and surface treatment processes required

• Processing

Process control and expertise starting with the production processes for the manufacture of chain components right up to assembly precision and initial lubrication

Wear resistance

Definition

The wear in the chain links and the resulting chain elongation determine the operating conditions and the service life of chains. Wear elongation is the result of material being removed in the chain link, between pin and bush, during operation. Tensile strength, friction joint motion and lubrication are important factors that affect chain wear.

Testing method

The expected service life of roller chains is tested on wear test rigs under defined and reproducible test conditions. Any chain elongation that occurs is measured at defined intervals.

This is what makes iwis chains so wear-resistant:

- Optimized dimensioning of the centre distance and number of teeth of the sprockets to reduce the joint surface pressure and the friction path
- High level of corrosion resistance
- Lubrication matched to requirements
 Material pairing in the chain link

 Friction path
 Friction path
 Time



For validation, we use a large test environment with chain-specific test rigs. The stipulations of the ISO standards and our own supplementary iwis standards are followed.





Fatigue strength

Definition

During operation, chains are subjected to dynamic forces and this leads to fatigue. The fatigue strength of a chain is the minimum dynamic load that a chain can withstand without failure for up to 10^7 load cycles.

Testing method

These alternating or threshold loads can be generated on a pulsator to determine the number of load cycles until failure, known as a fatigue fracture. The test is repeated with further, reduced loads until finally no more failures occur. Fatigue strength is determined using repeat tests in accordance with ISO 15654.



Chain maintenance

Lubrication

Suitable lubrication is a key factor in the durability of a chain whose individual links act as friction bearings as they perform a pivoting motion. An efficient lubrication system should therefore be used as a matter of course in order to ensure that the lubrication film in the link remains intact, thus avoiding unlubricated movements that cause a high degree of wear. Inadequate lubrication and dirty operating conditions lead to reduced efficiency and greater wear.

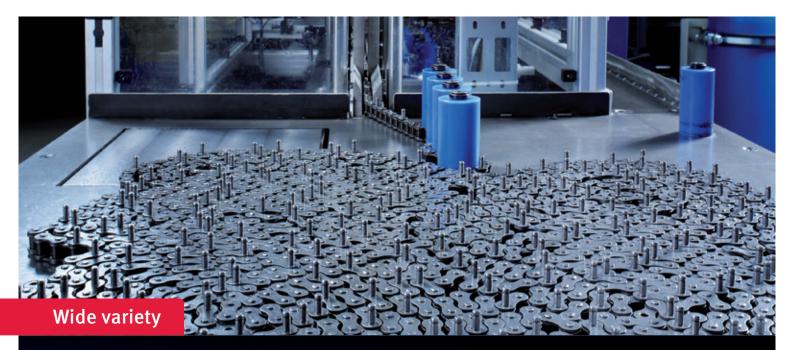
Chain tensioning

Ensuring that chain drives are maintained properly reduces the risk of downtimes and prolongs the service life of the chain.

If the chain slack is too small, the chain tension is too high. Increased pressure on the bearing causes high friction, which can in turn result in faster wear elongation. As well as the chain itself, other machine components will also be subject to higher loads, which will in turn shorten their service life.

If chain slack is too large, the chain tension is too low. This will lead not only to increased noise, but also to an increased risk of the chain jumping off the sprocket and breaking. Considerable transverse oscillations can occur in long, loose chain sections as a result of the superimposed pulse and natural frequencies of the drive.

Regular visual inspection (wear elongation, tension, lubrication and visible signs of wear) is recommended.



Our product portfolio covers the entire range of innovative drive solutions for a wide variety of sectors. An extensive range of all chain-related accessories rounds off the offering.





Technology leader

A European technology leader, iwis develops and manufactures innovative precision chain systems for drive solutions that set new standards in quality and cost-efficiency. Our extremely varied product range extends from high-performance standard products right up to high-precision, high-quality chains for flexible, tailored applications of all kinds.

iwis offers all-round solutions that go far beyond just the chain and cover the entire scope of the application.

We are committed to delivering nothing less than technical perfection to provide top quality for maximum customer benefit.

Highlights



Roller chains



Conveyor chains





Grip chains



Accumulation chains



Leaf chains



Flat top chains



Sprockets



Tools



CCM-S Chain Condition Monitoring



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CLA lubrication system

Our success is founded on strong brands

The iwis brands cover different performance categories from standard to premium solutions and dedicated product brands for specific applications.

FLEXON



Leading in all performance classes

With an ever watchful eye on the needs of our customers, it is our job to offer outstanding brands, innovative product developments and top-class tailored solutions to help keep the world "on the move".

Our five main brands cover the entire spectrum of innovative drive solutions. The different performance categories we offer ensure that iwis has the right solution for virtually any drive technology application.

While our premium brand JWIS provides the very best in precision, accuracy and length control, the ELITE and Eurochain brands offer high-quality, wide-ranging solutions for virtually any application.

We have established dedicated brands for special products. They highlight important technical characteristics and core iwis competencies for a particular range. Such brands include MEGALIFE, b,dry, b.triton, CCM-S and CLA.



Application examples



iwis solutions for the **automotive industry**

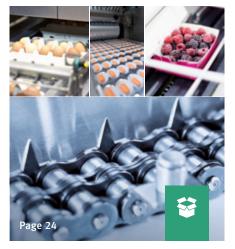


iwis solutions for **logistics and conveyor technology**

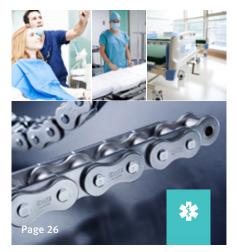




iwis solutions for the **food processing industry**



iwis solutions for the **packaging industry**



iwis solutions for **medical engineering**



iwis solutions for agricultural machinery technology





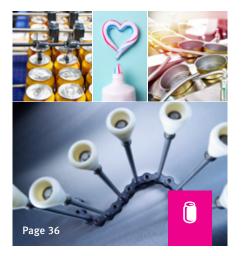
iwis solutions for **lifting equipment** and material handling vehicles



iwis solutions for the bread and baking industry



iwis solutions for the **timber industry**



iwis solutions for **beverage can and tube manufacturing**



iwis solutions for **maintenance**





More information: www.iwis.com/ccm-s



iwis solutions for the automotive industry

Looking to the future, innovative solutions for the automotive industry are becoming increasingly important. Fast cycle times and just-in-time methods demand absolute reliability of the production components. With our tailored precision chain systems, we make it easier for you to implement innovations and optimize the production process. **After all: together, we move the world!**

WIS

Occupational safety compliant with DIN EN ISO 13857 thanks to safety guard on apron conveyor chains



High quality and reliability

The automotive industry has extremely high expectations of its suppliers in respect of their production equipment. iwis offers tailored solutions that precisely meet the requirements of the applications. These include such things as digital monitoring for interruption-free production using our CCM-S, low-noise, long-life and maintenance-free MEGAlife chains and maintenance-free, PWIS-free b.dry stainless steel chains. Both the MEGAlife and b.dry chains feature minimal initial elongation, which means less re-tensioning and less maintenance.

Transport solutions from iwis are suitable for a range of component containers as well as for complete units and prevent damage to products.

Our products ensure that your JIS production processes run smoothly. The use of iwis chain systems boosts the productivity of the plant equipment and results in higher speeds. Low friction leads to lower power consumption, lower noise and less wear.

iwis antriebssysteme – Technology leader and your partner for any transport solution!



Our products for the automotive industry

- Roller chains (also with straight side plates)
- Maintenance-free MEGAlife roller chains
- Accumulation chains
- Bush conveyor chains
- Sprockets
- Push-pull chains
- Plate conveyor chains
- CCM-S Chain Condition Monitoring

Applications:



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The constant trend towards globalization, increased stockturn and the rapid availability of goods all present new challenges, and not only for the logistics sector. iwis antriebssysteme consistently meets the most stringent of customer requirements and constantly impresses with quality and

all-round service. After all: only together do we move the world!

Quality verification as per EC Machinery Directive 2006/42/EC

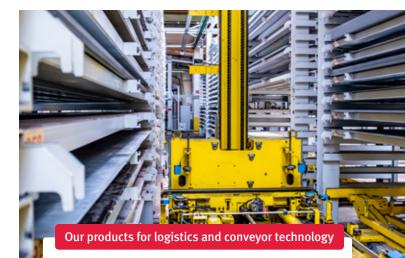


High quality and reliability

Conveyor technology is a particular field within the discipline of specialist mechanical and plant engineering and is concerned with the design, dimensioning, planning and implementation of equipment for transporting unitized goods (pallets, crates, packages etc.) or bulk goods. One of the new challenges is to store, buffer, separate and pick disparate kinds of goods in the same operations. To do this, the systems must be able to move and store both suspended and standing goods safely, reliably and efficiently. Most of these transport systems operate within a single organization and generally have to provide uninterrupted operation 24 hours a day, 7 days a week.

Logistics is an umbrella term for transport, storage and picking systems that in turn support and ensure the overall flow of goods within very different processes. All of these areas make use of drive chain systems, often of very different types. The demands on the various different characteristics of the chains, such as surface quality, tolerances, breaking strength, fatigue strength, lubricant or freedom from lubricant and reproducibility, are simply enormous.

iwis has stringent requirements as to the quality of its chains and validates them with an extensive range of measures.



- Conveyor chains, accumulating chains
- MEGAlife maintenance-free chains
- Leaf chains
- Precision roller chains, also with straight side plates
- CF stainless steel roller chains
- Roller chains with straight chain plates
- Flat top chains and modular belts
- Sprockets and guides





The food processing industry is a sector that is enjoying strong global growth. It has high expectations in respect of production efficiency and places ever more stringent demands on product quality and safety. iwis chains ensure reliability, long service life and maximum precision in the production and packaging equipment they are used in.





Hygienic and long-lasting

The food processing industry places the very highest demands on chain and drive systems. These demands focus on **smooth synchronous operation, precise positioning** and **optimized downtimes** in order to ensure the most efficient and problem-free production process and product handling possible. In addition, the issues of cleaning, relubrication and the associated product safety are becoming ever more significant.

A wide range of choices with respect to suitable products, processes, materials and lubricants give precision chains from iwis an outstanding service life, the greatest possible length precision and strict tolerances across pairs of chains in any application.

Our team will be happy to advise you when choosing and implementing suitable manufacturing technologies. New addition to the range: Additive technologies for optimizing the cost-efficiency of your application.

iwis antriebssysteme – Technology leader and your partner for any transport solution!



Our products for the food processing industry

- Standard and stainless steel roller chains
- Conveyor chains with custom attachment plates
- Maintenance-free MEGAlife chains
- Maintenance-free CF b.dry stainless steel chains
- Flat top chains and modular belts
- CCM-S Chain Condition Monitoring
- CLA relubrication system
- Sprockets and tools

Applications:



Mould conveyor systems

Proofing chambers

Production machines of all kinds

Cutting machines

Sorting systems

Deep drawing and thermoforming machines

Bakery tunnel ovens



The packaging industry is one of the most innovative in the world. Almost all manufactured products have to be properly packaged. iwis chains ensure reliability, long service life and maximum precision in the packaging machines they are used in.





Precise and reliable

The packaging machine industry, which is one of the most important sectors in mechanical engineering, places extremely high demands on chains and chain systems. These systems often have to cope with extremely short cycle times and high speeds. Furthermore, synchronized parallel operation and precise positioning are an absolute must.

A wide range of choices with respect to suitable materials and lubricants give precision chains from iwis an outstanding service life, the greatest possible length precision and high accuracy when matching pairs of chains.

Our custom solutions include, for example, chains with predefined length tolerances, colour marking for deep drawing machines to avoid plastic film becoming displaced in the application, grip chains with optimized springs, hardened sprockets, geometries optimized for long service life and stainless steel conveyor chains that have been length-matched for parallel operation.

iwis antriebssysteme – Technology leader and your partner for any packaging solution!

Our products for the packaging industry

- Grip chains
- CF stainless steel chains
- Maintenance-free MEGAlife chains
- Corrosion-resistant CR chains
- Can and tube chains, spike chains
- Roller chains with a variety of bent and flat attachment plates
- Maintenance-free b.dry stainless steel chains
- CCM-S Chain Condition Monitoring

Applications:

Forming, filling and sealing machines

Pouch machines De

Deep-drawing, thermoforming machines

Cartoning machines

Blister packaging machines

Stretch wrap / shrink wrap machines

Packaging material production

Pharmaceuticals Food

25



Demographic change means that medical engineering is set to be one of the world's megatrends. We see a great opportunity to work with our customers to develop chain system solutions using our existing innovative strength coupled with motivation and commitment. In this field in particular, custom solutions are where our strength lies. After all: only together do we move the world!

JANTIS (

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Extremely stringent requirements

Medical engineering, or biomedical engineering, falls into a wide range of subcategories. Broadly, these relate to diagnostics, therapy, nursing care, convalescence and improvement of the general quality of life. And in this industry above all, where patient welfare is the number one priority, no compromises can be made in respect of quality.

But it is also the case that factors such as service life, haptics, sustainability and visual appearance play a special, highly important role. Across the globe, medical devices and equipment are subject to special standards and regulations, and the requirements for entry into the market are extremely high.

Over the years, iwis has become an established, trusted partner in this market and is a supplier of choice when it comes to new developments. The general requirements in respect of the various different characteristics of the chains, such as surface quality, tolerances, breaking strength, fatigue strength, lubricant or freedom from lubricant and reproducibility, are particularly stringent.

We would be happy to support you when calculating and configuring the chain you need for your application!

Our products for medical engineering

- CF stainless steel chains
- b.dry maintenance-free stainless steel chains
- Roller chains with attachments
- Nickel-plated roller chains
- MEGAlife maintenance-free chains
- Grip chains
- Push-pull chains
- Development of complex drive systems

Applications:



Dental treatment units

Convalescence chairs

Hospital beds

Mobility wheelchairs

Clean room applications



iwis solutions for agricultural machinery technology

As **the market's leading supplier of agricultural drive chains and components**, iwis offers not only its proven quality and performance but also top-class, expert consulting services. Specially tailored to meet your needs!





iwis agrisystems

iwis chains are fitted in all commonly used types of agricultural machinery across the globe. Our agricultural machinery range includes not only chains for a wide variety of applications, it also encompasses the associated attachments for all the various chain types.

All agricultural chains from iwis agrisystems are subjected to rigorous testing in the laboratories, test rigs and simulation facilities at iwis's production plants to guarantee the same reliability and quality no matter how extreme the working environment. After all, harsh conditions are a part of life wherever agricultural machinery is in use: Rain and fog, fertilizer and different soils demand resilient, long-lasting and sustainable solutions for the chains in use on the vehicles.

Which means that constant innovation is vital in agricultural engineering. Development highlights include the **HBC** (heavy baler chain) range of roller chains, which was specially developed for use in balers, as well as our HFA (high fatigue alloy) technology for increasing fatigue strength or the optional **zinc flake coat**ing for chains.



Our products for the agricultural engineering industry

- H.SP and HBC chains
- Elevator chains
- Gathering chains
- Maize attachment chains
- Feederhouse chains
- Sprockets
- Pulleys
- Hydraulic distributor blocks
- Cast and forged parts

Applications:

Combine harvesters

Gathering inlets

Balers

Self-loading forage boxes

Grubbers and potato harvesters

Seed drills

Handling and drying of grain

Special machines for harvesting fruit and vegetables



iwis solutions for lifting equipment and material handling vehicles

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Identifying new trends, designing logistics solutions and developing new materials and manufacturing technologies – iwis achieves all this through innovative strength, motivation and dedication. Which allows us to maintain our position as the market leader.

iwis leaf chains comply with the **EC Machinery Directive 2006/42/EC**





Safety for people and goods

Material handling vehicles are used in pretty well all production companies and ensure an optimum flow of materials throughout the plant. The applications place high demands on the chains used. The equipment is used indoors and outdoors and has to remain operational in all weathers. These chains have been designed in collaboration with the users. They are safety-relevant components and should offer safety for people and goods.

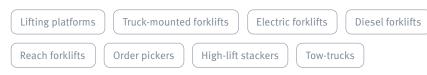
iwis antriebssysteme sees its role as a **development partner** and, as a technology leader, supports you in overcoming the challenges you face. Ultramodern **simulation and design tools that have been developed in house** help our development engineers to select the right products up front.

iwis has stringent requirements as to the quality of its chains and validates them with an extensive range of measures.



- Works standard leaf chains
- Coated leaf chains
- DIN-compliant leaf chains
- Roller chains
- Pulleys and connection material

Applications:







iwis solutions for the bread and baking industry

The bread and baking industry is constantly confronted with growing consumer needs. iwis supports companies in the baking industry with **top-quality chain solutions** and trailblazing solutions for **preventive maintenance**. In this way, we want to help you to minimize downtimes and maximize productivity; after all: together we move the world.





Performance across the board

The bread and baking industry places high demands on chain technology. We offer perfectly tailored solutions to take account of critical aspects such as hygiene regulations, different temperature ranges, high precision and corrosion resistance. Our product range covers drive and conveyor chains for the entire process, from production of the dough, through fermentation and right up to packaging of the finished goods.

No matter whether you are making croissants (radial power bend chains), pastries or baguettes (flat top chains), iwis offers a comprehensive range of products that meet all of your requirements in terms of hygiene, temperature fluctuations and cleaning.

iwis antriebssysteme sees its role as a development partner and, as a technology leader, supports you in overcoming the challenges you face. Ultramodern simulation and design tools that have been developed in house help our development department to select the right products for you up front.



iwis solutions for the bread and baking industry

- Roller chains with attachments
- Bush conveyor chains
- Maintenance-free MEGAlife roller chains
- Coated roller chains
- CF stainless steel chains
- Corrosion-resistant CR chains
- Hollow pin chains HB50.8
- Grip chains

Applications:



Production of the dough

Processing of the dough

Fermentation

Baking

Conveyor equipment

ment Packaging of the bakery products

33



The timber industry places heavy demands on its plant equipment: High speeds and heavy loads, moisture and very low temperatures require special solutions. Maintenance-free and low-maintenance chains from iwis ensure optimum service life and longer maintenance intervals.



Reliability and a strong segment focus

Our product brands JWIS, ELITE and EUROCHAIN offer an extensive range of chains for a wide variety of applications in the timber industry. Alongside drive roller chains compliant with DIN 8187 and DIN 8188 (DIN ISO 606), our portfolio also features selected conveyor chains such as tooth link chains and a number of different bush conveyor chains. One thing iwis concentrates on is to offer companies in the timber industry application-specific chains manufactured on the basis of drawings. Our engineering experts develop the best possible solution to keep timber on the move.

All chains significantly exceed the values for wear and fatigue strength laid down by DIN and ISO and are quality monitored and continuously tested in compliance with the stringent requirements defined in ISO 9001. After all, many chains are subjected to high dynamic stresses in the timber industry and are therefore specifically designed for high impact resistance. Sprockets, plate wheels and accessories round off our product range.



- Roller chains up to 4.5" (BS and ANSI)
- Roller chains with elastomer profiles
- Roller chains with sawtooth plates
- Bush conveyor chains
- Forked link chains
- Deep link roller chains
- Scraper chains
- Hollow pin chains
- Sprockets and plate wheels

Applications:

Transport of sawn timber

Transport of logs Sawmill conveyors

Transport of boards

Further processing of timber

Sawdust conveyors



iwis solutions for beverage can and tube manufacturing

The use of can and tube conveyor chains in the metal packaging industry is a complex challenge. During production, the chains used must transport cans and other thin-walled hollow bodies reliably and safely through several processing stations at high speeds and high temperatures.





Wear-resistant and durable

Our range of can and tube conveyor chains offers a wide range of solutions for the metal packaging industry and ensures that your products are transported optimally. Ongoing product development and predictive maintenance systems help you to tune your production processes for sustainability and reliability. iwis can and tube conveyor chains are particularly wear-resistant and, depending on the chain type, maintenance-free.

An extensive portfolio of conveyor chains, transport rods, pin tips and high-quality protective heads, as well as special pin and chain geometries and a variety of coatings, guarantee the right solution for every application. Our engineering department will be happy to advise you at any time.

iwis also offers the appropriate lubrication solutions. After all: The right lubrication is crucial for the durability of the chain. This is why our can conveyor chains (POC), for instance, are treated with our special lubricant IPP before they are used for the first time: IPP is PWIS-free and non-drip. It has a very low vaporization rate, is suitable for high temperatures and has been approved for the food industry.

Our products for Beverage Can and Tube Manufacturing

- Maintenance-free can conveyor chains
- Selection of different protective heads
- Length of conveyor rods as per specification
- Various solutions for attaching conveyor pins
- Extensive range of replacement parts
- Chain tools
- CCM-S Chain Condition Monitoring

Applications:

Can production

Manufacture of tubes



Regular maintenance and servicing prevent breakdowns in machines and production systems. iwis actively supports and advises you in respect of maintenance work on roller chains, industrial chains, sprockets and other drive components. This ensures that your plant remains operational. After all, proper maintenance is absolutely essential for keeping levels of wear low in your application.

ciwiTools

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Long service life for top performance

Ever shorter planning and production cycles are making problem-free maintenance increasingly important. Those responsible must ensure the availability of machines and systems using the latest methods and technologies while keeping a watchful eye on costs. Our range of iwis accessories is perfectly matched to our chain portfolio and guarantees maximum functionality and a long service life for the chains that are deployed.

At the same time, it is our company philosophy to offer solutions, in particular for special applications. We can help you by advising on the selection and use of technological developments in the chain sector in order to optimize the performance and service life of your equipment.

Have a word with us - we would be only too happy to give advice!



Wherever chains are subject to wear or require lubrication / can be lubricated

Chain shortening workshops

• Drive components

Our products for maintenance

CCM-S Chain Condition Monitoring

CLA lubrication system

• Relubricants

Wear gauges
Chain tools
Chain pullers
Chain tensioner

• Sprockets

Wherever large-scale chains need to be separated and riveted





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