

Automation and Process Control

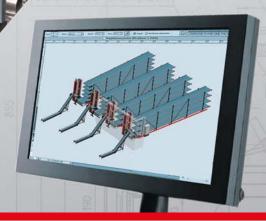


In- and Offline Separation

System
Components
and Integrative
Solutions for the
Material Flow

Innovative Conveyor Technique





Complete Systems for Optimizing the Material Flow

MTF Technology for Your Success

Competence and Customer Satisfaction



Hardy Schürfeld Managing Partner of MTF Technik

Permanent peak performance with respect to response times, quality of advice and products, adherence to schedules, as well as perfect service are our basic understanding of a successful corporate philosophy. For over 40 years and now in the second generation of owners, MTF Technik has developed and produced customised solutions of the highest technical quality for the in-house material

flow. Our uncompromising philosophy of quality and the resulting reliability and durability of the systems, combined with the on-schedule delivery and installation have left our customers saying for decades: "once MTF – always MTF". Let us convince you, too!

Advice, Planning and Realisation



Started as a manufacturer of serial belt conveyors, we are today one of the largest and most professional hightech companies in the field of in-house material flow management. We deliver our fully automated con-

veyor systems – in part from machine output to the shipping department – with integrated separation and buffer systems throughout Europe.

Problem Solutions and Innovations





Simple and rational solutions for the most difficult requirements in material flow, separation and sorting

are a special strength of MTF Technik. Many years of experience in conveyance, separation and automation technology in various industry sectors as well as the direct contact with our customers provide for a constant evolution of the MTF performance spectrum.

A wide range of own patents guarantees perfect functionality and uniqueness of our products and shows our innovative capacity.





Conveyor Technique 4 –	13
Model Overview: Conveyor Technique Multi-Tech Belt Conveyors	4 6
Multi-Tech Special Conveyors	8
I-Tech Small Belt Conveyors Mono-Frame Hinged Steel Plate Conveyors	10 12
Mono-Frame Magnetic Conveyors	13
Conquestion 14	17
Separation 14-	1 /
Inline Separation Systems Separating Attachments for Direct Assembly at the Conveyor Outlet Offline Separation Systems	14 15 16
Automation 18-2	25
Complete System Construction Advice, Planning and Projection Buffer Stations	18 20 22 24
Distributing, Sorting and Filling Devices	27

26

28 29

30 31

Multi-Tech Profile and Bending Technology

Conveyor Belts and Cleat Variants

Conveyor Accessories and Detectors

Conveyor Drive Units

Conveyor Underframes

Model Overview: Conveyor Technique

Multi-Tech Belt Conveyors



GL-Conveyors





MTF Multi-Tech Profile Technology – Unique in Conveyor Engineering

The MTF Multi-Tech Profile technology, consisting of a self-supporting aluminium double-

bar construction, is a "revolution in conveyor engineering"! The multifunctional, anodized aluminium guiding profiles with pairs of recessed T-grooves can be perfectly combined with the all-purpose MTF



underframes. Likewise, many accessories can quickly and easily be added to the main profiles.

Seamless and fluid transitions in negative and positive bends

Our design features in the lower, negative bends and in the upper, positive bends guarantee a consistent, seamless and fluid transition between flat and steep conveyor sections for all angles between 0° and 60°. The bend cov-



ers consist of stable, plastic-coated cast aluminium parts that can also withstand a heavy blow.

Patented Bending Technology

Our patented solution for all MTF Multi-Tech

conveyors is unique in the field of angled belt conveyors. With a cam slide in the lower flat belt section, the belt tension over the entire range of angles from 0° to 60° re-



mains absolutely constant!

MTF belt conveyors thus require no wear-intensive V-guide profiles on the inside for a proper tracking ability: a great advantage, especially for clean rooms!

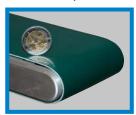


Model Overview: Belt Conveyors

Technik

I-Tech Small Belt Conveyors

The low construction height and the perfect ratio of outside width to useable width make these conveyor belts indispensable wherever



little room is available. So the "I" in the model designation stands for "Integration" in machine shafts, production processes, automation systems and other special ap-

plications.

The great selection of belt materials, drive units and bases make them universally installable. Their range of application stretches from output belts from press machines to the transport belt in pharmaceutical automation systems or in clean rooms.

Mono-Frame Hinged Steel Plate Conveyors



Mono-Frame Hinged Steel Plate Conveyors can be installed in many ways. They serve as chip conveyors, as output belts for pressed components, as deposition belts for die-cast components or even as transport

for very hot or phthalate-containing plastic components. Hinged plates from steel or stainless steel with temperature resistance up to 350°C, various surface finishes (flat, nubby, slotted, perforated), stable and flexible bases as well as a perfect appearance make these conveyors unique.

Mono-Frame Magnetic Conveyors

Mono-Frame Magnetic Conveyor Belts are es-



pecially suited for the transport of very small, sharp and flat ferritic materials, as often produced in presses or in companies with mechanical processing. Due to various mov-

ing metal surfaces, drive units, and bases these conveyor belts are universally installable. The Magnetic Conveyors have a honeycombed aluminium frame with side grooves to which bases and special attachments can be easily fastened. A perfect seal between body and sliding sheet metal prevents a jam of moving goods or the penetration of dirt into the inside of the conveyor.





Hinged Steel Plate Conveyors



Multi-Tech Belt Conveyors

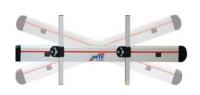












Multi-Level Conveyor System

Variable Underframes



Operation on Steps



Multi-Track Conveyor



Parallel Conveyors



Roller Conveyors from Plastics to Steel



Water Conveyor



Belt Outlet with End Piece Extension



Conveyor Combination for Coin Roll Transport



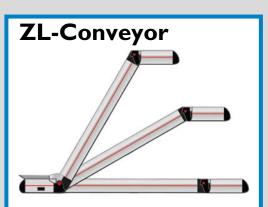
Angled Conveyor Belts up to 1500 mm Wide

Multi-Tech Conveyor Belts Are Long-Term Investments!

Through the patented MTF Bending Technology, the Multi-Tech belt conveyors can be adjusted to vertical angles anywhere from 0° to 60° without altering the belt tension.







Multi-Tech Special Belt Conveyors











Clean Room Application with Ionisation and Distribution Switch





Variants, Examples and Special Versions



Metal Detection



Inlet Hopper with Integrated Selection Switch



Multi-Change with I-Tech Conveyor



Parallel Buffer



Cooling and Buffering of Parts



Granulator Feeding Conveyor with Tunnel Detector



Rack with Linear Displacement



Granulator Feeding Conveyor with Integrated Metal Detector



Clean Room Transfer Conveyor



Workplace Control Lighting



Stainless Steel Catch Tub



Height Adjustment by Means of Scissor Lift Tables



Conveyor Combination with Pneumatic Dumping Device for filling Bulk Containers



Belt Conveyor Combination as Bunker



Strap Conveyor with Extra High Air Passage



Steep Conveyance

I-Tech Small Belt Conveyors





Technik

Variants, Examples and Special Versions



with Shiftable Center Drive





Multi-Level Belt Conveyor



Conveyor Combination with Height Adjustment



Multi-Level Conveyor with Outlet Tubes

I-Tech Small Belt Conveyors are perfectly suited for installation in tight machine shafts and as a solution for other hard-to-access conveying requirements.



Here are some I-Tech examples with granulator (above), as compact testing solution with tunnel detector (right), or as buffer station for small components (below).





Mono-Frame Hinged Steel Plate Conveyors





with Stainless Steel Metal Guiding Plates and Special Underframe



with Extended Intake and Stainless Steel Hopper

Designed for the "tough-as-nails use", the Mono-Frame Hinged Steel Plate Conveyors are equipped with especially powerful drive motors.



as GV/ZVF Conveyor Combination

Technik

Mono-Frame Magnetic Conveyors





PMF-Conveyor in 90° Version



ZMF-Conveyor in 90° Version







Inline Separation Systems



Inline Separators

Compact and versatile separating attachments for direct assembly at the conveyor end.



Separating Attachments for Direct Assembly at the Conveyor End





Separation Roller Attachment Type TA for separating extensive pieces from runner sections. An additional installation on a Multi-Tech conveyor is easily possible.



Separation Roller Attachment Type TA Compact control unit with 7 speed steps for the separation rollers. The drive for the separation attachment is integrated in the rollers.



Screw Separation Attachment Type SAL for separation of parts with small size differences. This attachment can also additionally and easily be added to a Multi-Tech conveyor.

All MTF separation attachments can also mounted subsequently on Multi-Tech Conveyor.



Screw Separation Attachment Type SAL Special

Upon customer's request, the attachment has been installed in such a way that the separated pieces are dropped towards the centre of the conveyor.



Disc Separation Attachment Type SSA 400-2

Disc separation attachments are installed where a continous length adjustment of the separation gap is needed.

Angled Belt Conveyor with **Screw Separator**

MTF separation attachments can easily be mounted on all Multi-Tech conveyors. The independent power supply enables an individual speed adjustment for an optimal separation result. An overload protection guarantees the highest work safety and prevents damage to components.



Separation Systems as Stand-Alone Solutions or Integrated in the Conveying Process

Offline Separation as Stand-Alone Solution

MTF Multi-Tech Dosing Conveyor

with Separator PZ 257 B and

Visual Control Belt



or interlinking with a Multi-Tech ZL-Conveyor.

Magnetic Separation Drum with Multi-Tech Feeding Conveyor.







Sloughing Drum with Individual Adjustment



Perforated Drum with Reinforced Underframe



Hedgehog Drum



Rectangle Drum

Drum Separators

Freely adjustable in the conveying process or as a stand-alone solution.





Variants, Examples and Special Versions

Separation Drum with Planetary Central Adjustment

The MTF separation drums with planetary central adjustment can be set simply, quickly and exactly to the parts to be separated. All the rollers in the cage are adjusted and aligned in one step.

A wide product range can be processed with a single separation drum of this kind. Due to the continuously variable separaration gaps in the range between 3 and 53 mm the universal operational capacity of this separation drum is guaranteed.

Depending on the application, various roller materials (PVC, steel, stainless steel) and additional fittings are available.

Separation Drum with Individual Adjustment

For large series or parts with similar geometry, separation drums with individual adjustment are often a more economical solution. These drums are also especially suitable to cut off injection part/sprue combinations from each other in the first step and finally to separate them.



Planetary Central Adjustment



Individual Adjustment



Removable Sloughing Rollers

Variants



Safety Guard



Ionizing Fittings



Soundproof Hood



Perforated Cage made of Silicone

Perforated Drum

Perforated drums are the best solution if the parts to be separated are different in two dimensions only, such as discs with nearly identical thickness but different diameters.

For complex pieces there are also special hole geometries available that are tailored to the special task. Likewise, it is possible to create different separation zones in one perforated drum cage in order to allow multiple separations in one production step. Moreover, perforated drum cages can be connected to other separation drums as inlet or outlet zones to enable multiple separation sequences.



Perforated Drum Detail



Combined Perforated and Hedgehog Drum

Screw and Disc Separators



Roller Separation Drum with Perforated Drum Inlet Ring

Hedgehog Drum

Hedgehog drums are based on the idea of the perforated drum. The tubes ("hedgehog quills") mounted radially at the holes of the perforated cage serve to prevent bigger parts from winding through the holes or getting stuck there. Thus, hedgehog drums can also be used with very complex part geometries. As with all perforated drums, all hole and tube geometries are available on principle.



Detail of a Hedgehog Drum

Counting Device

Versions with



Screw Separator Unit

Rectangle Drum

The rectangle drum is, so to speak, a special version of the hedgehog drum with adjustable holes. With this drum type, parts are separated from each other in four tangential separation shafts. Here, the vertical side walls allow a very exact adjustment and prevent a winding of larger parts. The newly developed and patent-pending system of the moveable separation shafts effectively prevents the parts from jamming.



Detail of a Perforated/ Hedgehog Drum



Disc Separator Unit



with Item Singling and Counting

Automation and Plant Engineering



"Nous sommes très satisfaits - We are very satisfied!"

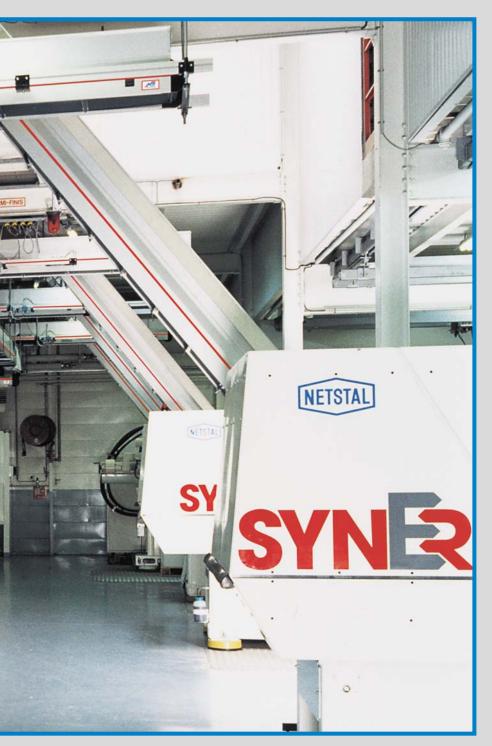
JACO S.A. in Alsace develops high-quality products for the pharmaceutical industry and delivers them worldwide. To fulfil the high quality standards of their customers in the medical sector and their increasing demand, JACO S.A. wanted to further increase its production capacity and asked MTF Technik for advice on establishing a conveyor system within its automation.

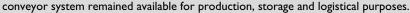
After one single visit of MTF engineers to JACO S.A., the customer's ideas could be incorporated into a qualified project outline. In contrast to offers JACO S.A. received from other suppliers, MTF Technik demonstrates to offers JACO S.A. received from other suppliers, MTF Technik demonstrates and the suppliers of the suppliers

strated high product and service quality and an excellent conceptual outline of the design of the conveyor system. Joint reference visits to other MTF customers convinced the management of JACO S.A. to assign the projection and the construction of the conveyor system to MTF Technik.

The high standard of workmanship exceeded the customer's expectations: the system was delivered, assembled, installed and put into production precisely on the agreed-upon deadline. In addition, the installation of the system on ceiling suspensions proved itself to be exceptionally easy to assemble and maintain. Moreover, the whole space below the







Finally, the MTF conveyor system perfected JACO's "Online Concept" from granulate to the finished product – a fully automated system from injection-moulding to printing machine. Now additional cardboard packaging for temporary storage was no longer needed, there was no more contamination or damage of products, and the staff could concentrate on further production increase and quality control.

Although JACO S.A. had initially planned to include further machines at a later date, they immediately awarded the follow-up order to MTF Technik, in light of this most productive co-operation.



Computer-controlled automation between injection-moulding and printing machines: plastic parts are distributed on further conveyor belts by means of pneumatically adjustable lateral conveyor belts from MTF Technik.



The delivery to covered feeding containers at the printing machine: the customer's high quality standards were perfectly fulfilled.

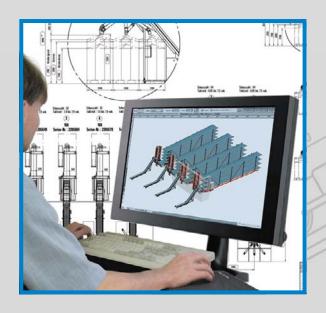


A closed system: The transfer from the injection moulding machine to the MTF conveyor system.

Just like at JACO, the MTF conveyor systems are conspicuously present in the manufacturing processes of many other companies in various industries.

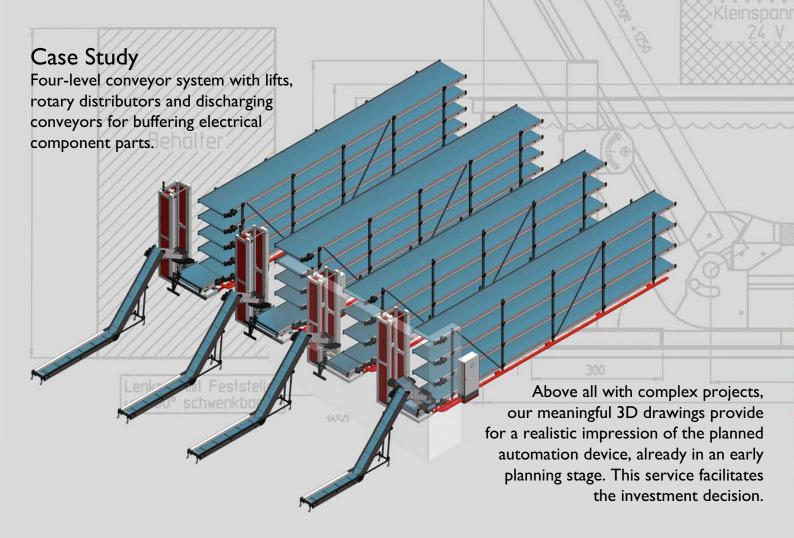
MTF Technik offers full service from planning and construction through manufacturing to the assembly and start-up of the devices at the customer's plants – including the entire control system.

Advice, Planning and Projection



Due to 40 years of experience in mechanical engineering and many proprietary patents, MTF Technik guarantees excellent design, high-precision assembly and outstanding product quality.

Our competent team of mechanical and electronic engineers, specially trained on our plant systems, provides for a perfect planning and a trouble-free execution of your plant investment.



Implementation





A core competence of MTF is the planning and implementation of even the most complex systems for the in-house material flow.



costly machine shutdowns.

Buffer Stations



MTF Multi-Level Conveyor System with Lift

In case an interim storage for a longer period is necessary, multi-level conveyor systems are often the adequate solution. The MTF engineers design the equipment within your production environment and thus provide for an optimal utilisation of the available space.

Buffer Stations for the Clean Room

Due to various realised projects in the medical technology sector, MTF Technik knows the features of clean room manufacturing. Therefore we offer special solutions for parts buffering, conveyor technology, separation and automation in these sensitive conditions.

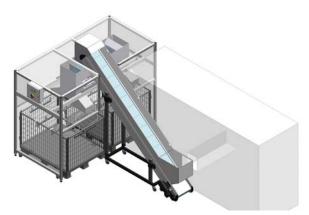




Variants, Examples and Special Versions



Multi-Level Buffer with Lift and Scale



I 2-fold Bag Filling with Pneumatic Shifting Conveyor and Double-Sided 3-Way Switches



Lift System for Multi-Level Buffering



Multi-Level Buffer with Double Lift and Robot Conveyor



Linear Buffer with Single Pusher



Clean room Linear Buffer with Feeding Conveyor



Linear Buffer with Double Pusher

Distributing, Sorting and Filling Devices





Multi-Linea with 6-fold Container Support and Special Underframe



Multi-Linea with 12-fold Container Reception



Multi-Linea with Vertically Adjustable Underframe

No matter which containers are used - cartons, boxes or bags - the MTF Multi-Linea can be adapted easily to the most varied tasks. In particular, the Multi-Linea can play to its strengths when the available space is small but relatively long.

In combination with a counting control, it provides for a trouble-free operation of your 'ghost shifts'.



Variants, Examples and Special Versions



Pick-Up System for Large-Volume Bags



Turntable Diameter from 800 mm to 2,000 mm



Pick-Up System in Clean Room Version with Special Bag Holders and Stainless Steel Turntable



Special System for Automated Conveyance and Distribution of Bottle Caps into Multiple Bulk Containers.

All Buffer Systems are customised depending on the individual task.



Pick-Up System with Stainless Steel Tray for the Clean Room



Double-Deck Pick-Up System for Cartons



Stainless Steel Rotary Buffer Table

in Stainless-Steel



Multi-Way Selection Switch



Multi-Rounder Multi-Rounder Distribution Distribution Switch

Switch

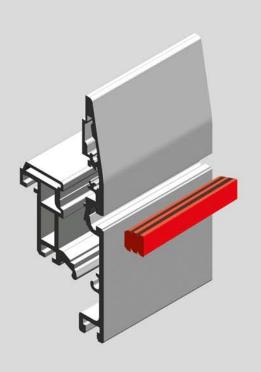
with Container Support

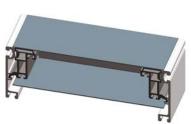
Technology in Detail

MTF Multi-Tech Profiles

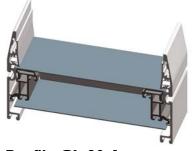
Multi-Tech Profiles: Brilliantly Simple and Simply Brilliant!

Underframes, ceiling suspensions, sensors, cable guides, drives and almost every kind of attachment can be fastened in the guiding profile grooves without using a drill. In addition, MTF conveyor belts are exceptionally maintenance-friendly, stable and have an appealing, modern industrial design.

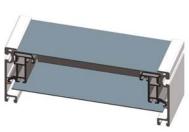




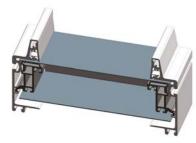
Profile GL 0For use with straight robot conveyors or when the conveyed goods extend laterally beyond the body of the conveyor.



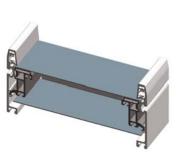
Profile GL 80 AFor use with straight conveyors with a lateral guiding height of more than 80mm.



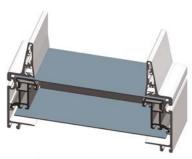
Profile GL 7
For use with conveyors at assembly points or when the edges of the belt cover need to be protected.



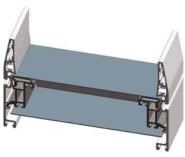
Profile KL 50Special profile to allow the lowest possible feeding heights with angled conveyors.



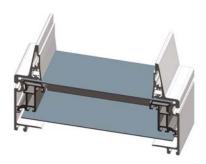
Profile GL 40For straight conveyor belts in low machine shafts or on multi-level conveyors.



Profile KL 80Standard profile for angled conveyors with a lateral guiding height of 80mm.



Profile GL 80
For use with straight conveyors where a lateral guiding height of 80mm is necessary, e.g. with inclining conveyor belts.



Profile KL 80 AFor use with angled conveyors with a lateral guiding height of more than 80mm.

Patented MTF Bending Technology

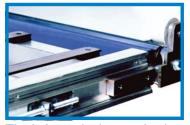




Perfect belt sealing in the entire upper bending area



Absolutely tight and seamless transition between flat and steep conveyor sections - regardless of the set angle between 0° and 60°

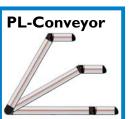


The belt tensioning mechanism (cam slide) integrated into the body of the conveyor provides for constant tension over the whole range of angles (patent)



Flexible covering of the adjustable angles, e.g. for clean room applications

NL-Conveyor



nyevors, the conveyor angles

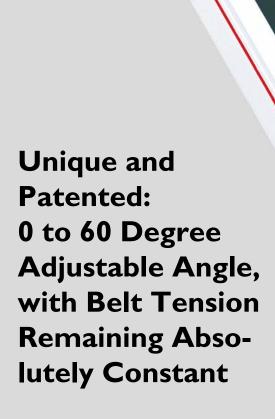
ZL-Conveyor

For all standard MTF Multi-Tech angled conveyors, the conveyor angles are continously adjustable between 0° and $60^{\circ}.$

A patented construction design provides all MTF Multi-Tech angled belt conveyors with absolutely constant belt tension over the entire range of angles from 0° to 60°. This optimises the tracking ability of the belt without additional restricted guidance and effectively prevents the belt from warping in the bend area. By means of this technology the surface pressure in the belt is reduced, which avoids abrasion and wear.

The perfect engineering in detail and the reliable workmanship characterise all MTF products and become evident especially at the "critical spots" of the conveyors. Thus the bend covers consist of stable, plastic-coated cast aluminium parts that can also withstand a heavy blow.

The standard hopper in the flat section of the conveyor is integrated into the bend cover to ensure a smooth and seamless transition between the conveyor sections at any time. Moreover, elastic sealing strips work nearly invisibly in the background to guarantee a perfect sealing between belt and lateral guiding in the hopper area — this works for any belt material.

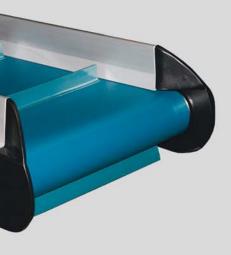




Conveyor Belts



We have the best suitable belt for each conveying requirement. By means of modifications and self-developments we can realise even the most challenging transport solutions.



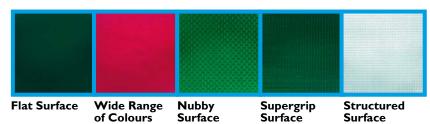


Variety and Quality

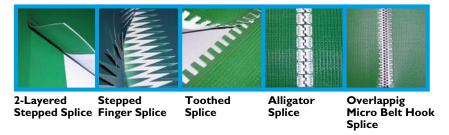
We definitely have the proper belt material for each conveying task. The intelligent and easy-to-maintain design of our conveyors makes it easy to change the belt. We offer the most varied materials, structures and colours of belts. When choosing the right belt, we consider all relevant criteria, like the weight and drop height of parts, their sharpness, temperature, surface sensitivity, whether their surfaces have been treated with chemicals or if the belt has to be food resistant, etc.

Moreover, due to our wide range of accessories, like side walls, longitudinal guides, cleats, guiding rails, endless joints and also individual solutions, we definitely create a belt suitable for your special needs.

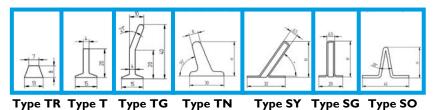
Examples of Belts:



Examples of Belt Joints:



Examples of Cleats:



Examples of Side Walls:



and Cleats Made of Belt Material



Polyester Belt with Longitudinal Guides and Sewed-on Cleats

Conveyor Drive Units

Technik

I-Tech



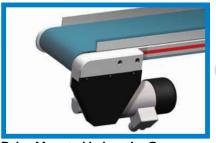
Flange Motor directly mounted on the drive roller, 4 x 90° rotatable

Maintenance-free **flange drive**. For all-purpose use, no chain, no pinions. Especially suitable for dusty and dirty environments.



Drum Motor: No cooling fans, no edges – perfect for use in the clean room

Drum motor in the drive roller. Absolutely compact design. Ideal for use in the clean room and any place where there is little space available for the drive.



Drive Mounted below the Conveyor also for I-Tech conveyors a perfect, slimline drive solution

Drive installed below the conveyor. No components lapping above the belt level.

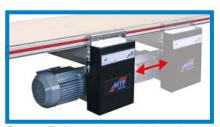
The motor is situated below the conveyor body.

I-Tech Special Drive Solutions



Center Drive with side-flanged motor

Drive installed laterally to the conveyor. For all-purpose use. Allows very flexible belt speeds.



Center Drive with motor below the conveyor body

The drive is flexibly moveable along the entire conveyor length and thus allows minimal deflexion roller diameters at both ends of the conveyor. Optionally, a drum motor can be integrated to the center drive.

Drive within the conveyor body. Very compact design; all drive components kept protected. Anyway, maintenance-friendly due to easy access to motor and control. A specialty of MTF Technik.

Multi-Tech



Conveyor Accessories and Detectors





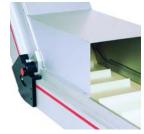
Single-Layered Metal Detector System

Motor-Driven Brush Wiper





Distribution Switches



Housings



Outlet Cover



Plates



Separating and Guiding Pneumatic Components



Soft Drop Chute



Image Recognitio



Tunnel Detectors



Ionisation



Sensors



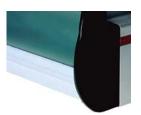
PLC-Controls



Adjustable Lateral Guides



Air Coolers



Brush Wipers at Conveyor Outlet



Arm Rests

Technik

Conveyor Underframes



HE 010, on a stable base frame, telescopic, laterally flush with the conveyor, allows extreme inclination angles.



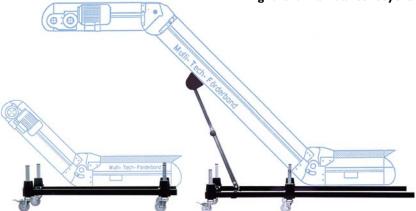
HE 020, on a stable base frame, with large-scale height adjustability and very variable angle adjustment.



LD 020, on a stable base frame, with telescopic, especially high load-bearing and height-adjustable double columns.



IE 010, on a base frame, with large-scale height adjustability and variable angle adjustment. Supported by gas pressure columns. For light and narrow conveyors.



KF 010, with skid support, wheels adjustable in height and length. For angled conveyors with short steep section.

TF 110, stable aluminium profile base frame with profiles, T-shaped middle support and gas-pressure spring, wheels adjustable in longitudinal direction.



AM 140, stable, height-adjustable single supports, best suited for various levels such as steppings or machine shafts.



MTF conveyor underframes are exceptionally stable and very flexible in use. Supports and bars with gas-pressure springs provide for an easy adjustability of the inclination angle of the steep section of the conveyor.



Special underframe with Pneumatic Linear Displacement





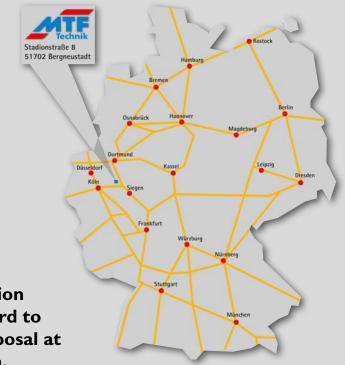
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