


MONTECH[®]

PHOTOVOLTAIC



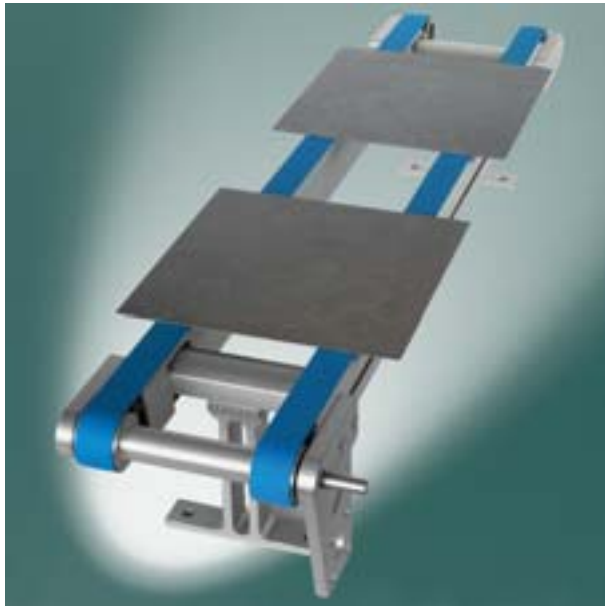
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Montech AG has stood for innovation in the automation industry since 1963. As a global player headquartered in Switzerland, we base our success on maintaining flexibility and close attention to customer needs around the world. As a specialist in photovoltaics, Montech provides customized solutions for the product- and process-specific needs of the photovoltaics industry with its conveyors and the Montrac conveyor system. Montrac stands for total flexibility in conveyor technology, providing unlimited possibilities, combined with user-friendly ease of operation. These products are based on our many years of experience in conveying technology and known in most industries for their superior quality.

CONVEYORS The trend to use standard components instead of manufacturing them in-house continues in the photovoltaics industry. By outsourcing conveyors, you can transform fixed into variable costs. At the same time, you are purchasing proven superior development and production expertise. Another advantage is that this will optimize your supply chain, mainly by increasing your flexibility regarding short-term demand and your ability to absorb capacity peaks. While you are focusing on your core competences, Montech will supply you with customized conveyors.

Montech conveyors for photovoltaics will move your wafers and cells within the machine, as well as upstream and downstream, simply and gently – without touching them from above.

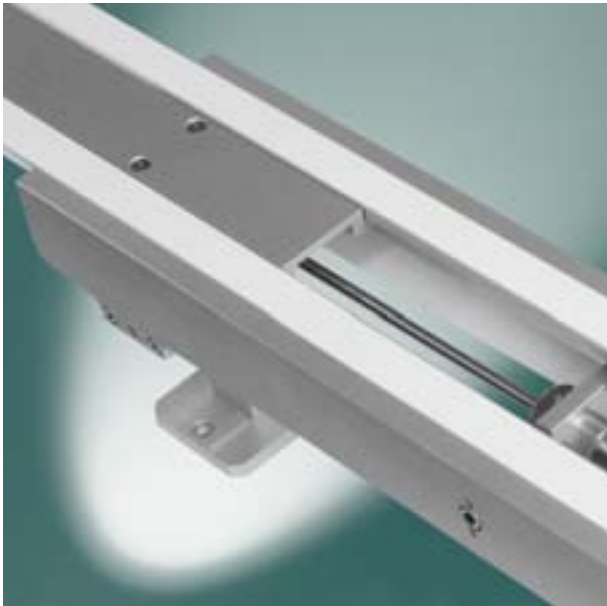


MONTRAC Montrac is an intelligent conveyor system for networking manufacturing and logistics processes. Montrac is the perfect solution for intralogistics in the photovoltaics industry – upstream, downstream or between machines. Smooth movement, autonomous controls and utmost flexibility will ensure perfect transport of carriers and boxes. Montrac interlinks processes, provides automated warehouse connectivity, and helps optimize the productivity of solar production lines.



THE ADVANTAGES OF CONVEYORS

FLEXIBILITY Our flexibility is your flexibility. Whether it is optimizing your supply chain or adapting products to your processes, our solar conveyors are always up to the task. Montech offers special solar conveyors in different configurations that can be fully customized to your needs, e.g., in length and width. But it's not just our product line that is flexible: Our lead times are also quite impressive, allowing us to meet your needs at short notice.



CUSTOMIZATION Montech offers highly advanced industrial conveyors that are completely tailored to your needs. Due to their modular design, conveyors can be built-to-order in any width and length. Each conveyor will be customized to fit your specific requirements. And: Our extensive experience allows us to implement even highly specialized applications.



HIGH QUALITY Our solar conveyors meet the most demanding quality requirements. Only high-quality materials are used that meet the requirements of heavy-duty continuous operation, ensuring supreme reliability. The design is precise, robust and sturdy. All steel parts are galvanized or made of stainless steel. The return pulleys are made mostly of stainless steel or aluminum.

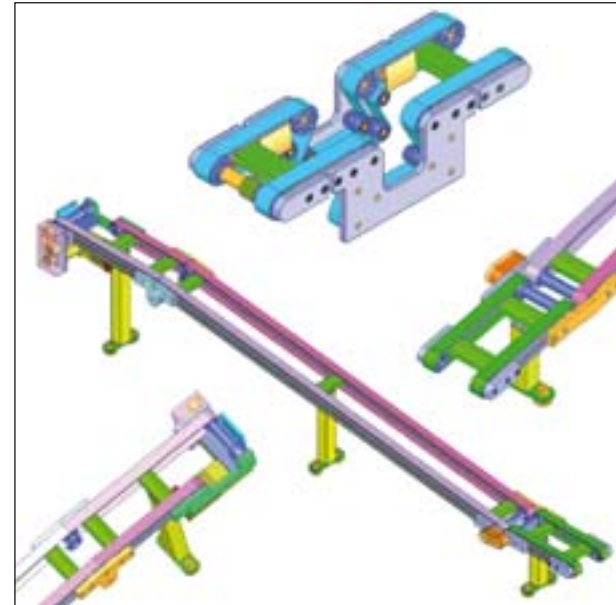
PRIVATE LABELING When we engage in private labeling, customer value comes first. As a result, we can mark all conveyors with your company logo. Give us a call so that we can discuss your needs in detail.





GENTLE HANDLING We care about your products, and that is why our conveyors move your wafers and cells with gentle care. When wafers and cells are no longer gripped from above, microcracks will be avoided.

SPECIAL APPLICATIONS Our extensive experience in photovoltaics allows us to implement even the most specialized applications. We support our customers through individualized special applications by providing top quality, innovative ideas and implementation processes.





CONVEYOR PRODUCTS FOR PHOTOVOLTAICS

SOLAR CONVEYORS

SoITB WITH FLAT BELT

SoITB WITH COGGED BELT

The SoITB are used as supply or removal conveyors or for inter-linking entire production lines; they are available with flat belts or cogged belts. The SoITB consists of a chassis with two belts, which are guaranteed to run synchronously. The complete conveyor can be installed and removed from above, and belts

can be replaced while the conveyor is installed.

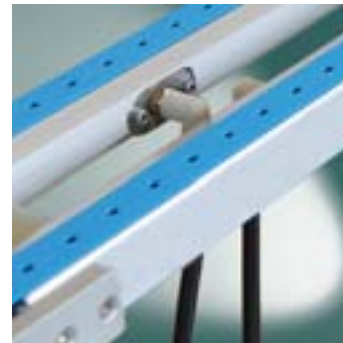
The SoITB does not have any protruding edges. It will transport the sensitive wafers with the highest precision and gentlest care. Since the conveyor consists only of a few components, the need for spares will be minimal. Broken wafers can fall out easily, as there is enough room between the belts.



VACUUM CONVEYOR The vacuum conveyor is based on the same geometry and the same components as the SoITB solar conveyor. The chassis is open in the middle, so that broken wafers can fall out easily. The major advantages of the vacuum conveyor over the SoITB are its more dynamic acceleration and braking curve, as well as a higher conveyor speed.

SWIVELING CONVEYOR

The swiveling conveyor allows the removal of defective products from the production line without causing production delays. Due to its centrally located drive, the removal conveyor does not have any protruding edges and can be installed in small spaces.

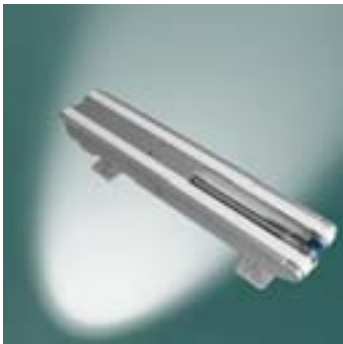


UNLOADING CONVEYOR

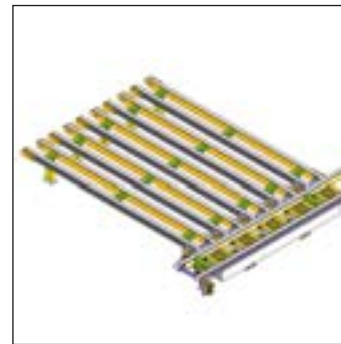
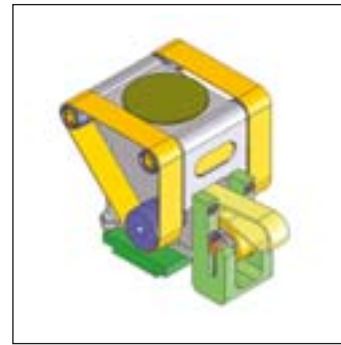
The unloading conveyor is a twin-belt conveyor consisting of a stationary and an extendable part with a 160-mm stroke. The extendable part enters the carrier and is driven by a pneumatic cylinder. The unloading conveyor only needs a pair of belts and one drive.



PROCESS CONVEYOR The process conveyor can be used to accurately check wafer edges. Since the conveyor is shorter and narrower than the wafer, the contours of the conveyor, which could interfere with the measuring results, are not visible.

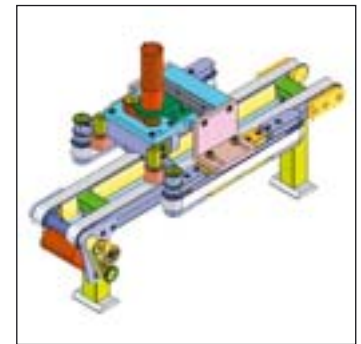
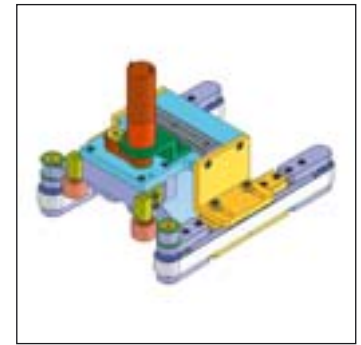


REMOVAL MODULE The vertical movement of the removal module allows turning wafers and cells by 90° without touching them from above. This will avoid microcracks and breakage, while moving the product quickly and gently.



CENTERING CONVEYOR

The centering conveyor allows precise alignment of the workpieces during transport. Correct positioning will be ensured without time lost or additional measuring and test equipment (such as vision or camera systems).





HOW MONTRAC WORKS

MONTRAC In 1996, Montrac was developed as a flexible alternative to existing transport systems. The incentive was to launch a transportation system that can be adapted quickly and cost-effectively to the customer's changing requirements. Thanks to the monorail, installation of the basic structure for a Montrac system is easy and economical. A Montrac system can run on the ground, at machine level or below the ceiling with only minor additional installations. Lifts for level transitions and switches and crossings for more complex line layouts complement the network of tracks.

Once the monorails have been installed, the shuttles can be placed on the rail anywhere. They work basically like taxis with a continuous power supply. A destination address is all that is needed; the shuttle will then run autonomously on the rail network to its destination. The shuttle can recognize its location within the system. It can see other shuttles or obstacles and will stop automatically. The shuttle can communicate with other components of the Montrac system. It will control lifts and switch elements in the system, as required by its destination.



LOGIC The logic of a Montrac system can be customized to the customer's needs and budget. The customer can choose from a broad range: chaos technology, individual local intelligences or a fully networked system.

Chaos technology is an appropriate and cost-efficient alternative if all the customer needs is feedback that the shuttle has arrived at its destination.

If more information or a higher level of complexity is required, there are different configurations available, ranging from individual local intelligences to a fully networked system with visualization and a central terminal.

Montech AG annually sells approx. 1500 shuttles and several miles of rail worldwide. Montrac combines innovation and experience in a unique way, which is why our customers from a wide variety of industries continue to select monorail systems.



THE ADVANTAGES OF MONTRAC

RELIABILITY Montrac is the most reliable system for moving your products. Montrac will always run without interruptions, since each shuttle can be removed quickly and easily from your production process without having to stop the system. Montrac's up-time is always 100%, avoiding production downtime. The only active components are the shuttles and switches. They were designed to be generally maintenance-free. The trac as a passive element is always functional.



FLEXIBILITY Your needs are our assets. That is why Montrac's mission is to meet tomorrow's needs today. This requires total flexibility: All components have the same basis and are compatible with each other.

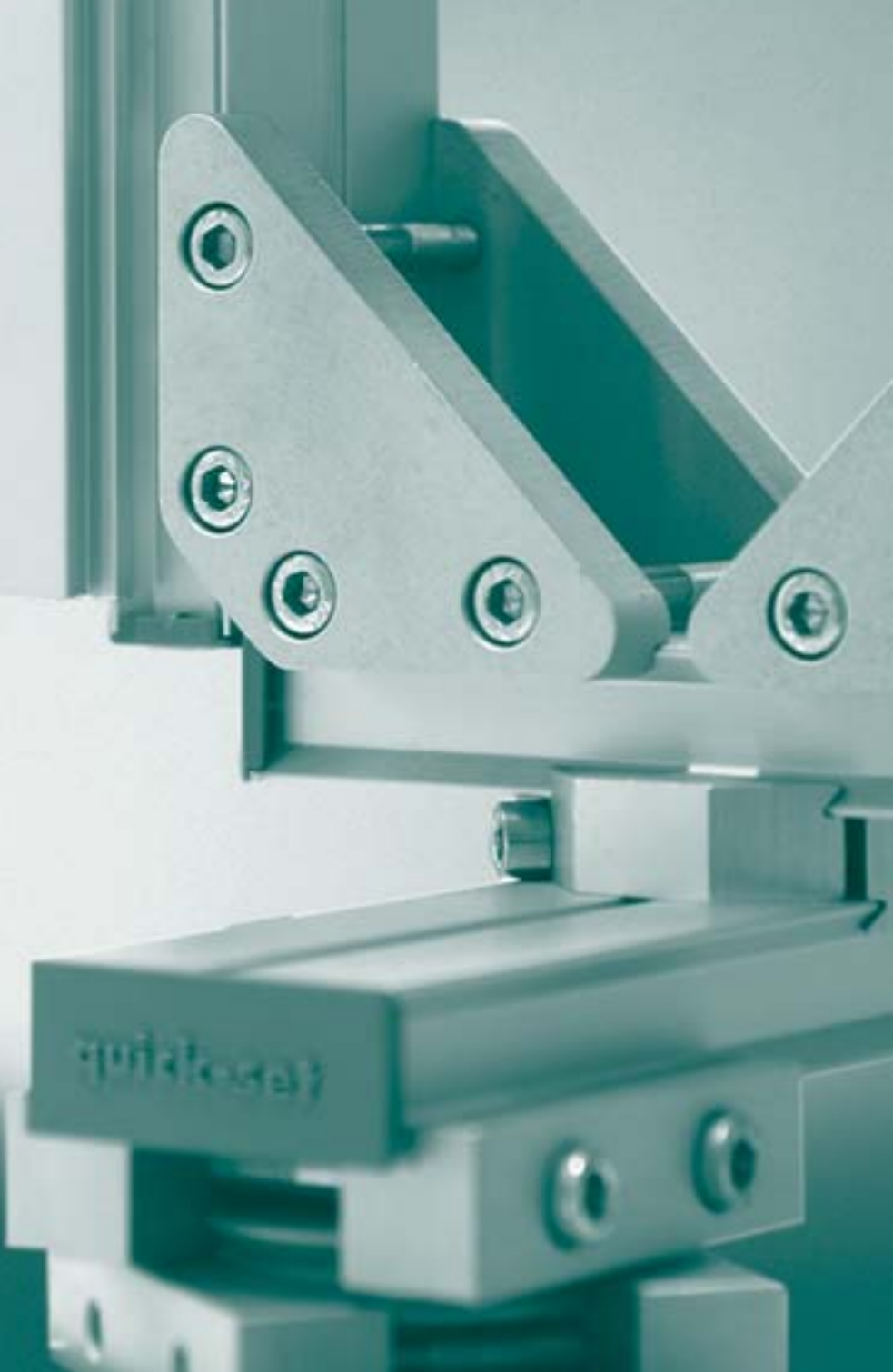
All tracs are available in any length. Bypasses, switches and curves are deliberately kept short, so that Montrac can be perfectly customized to your space requirements. Thanks to its monorails, Montrac can also run in curves with a very tight radius. Workpieces of different sizes can be moved on the same section. There are virtually no limits to Montrac's layout flexibility.



SMOOTH MOVEMENT Montrac will move highly sensitive products without jolts or vibrations. An optical sensor integrated in the shuttle will recognize obstacles and brake the shuttle.

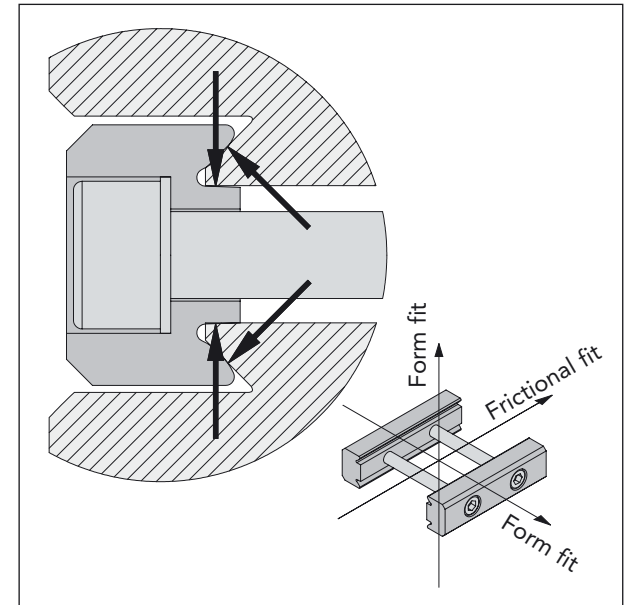
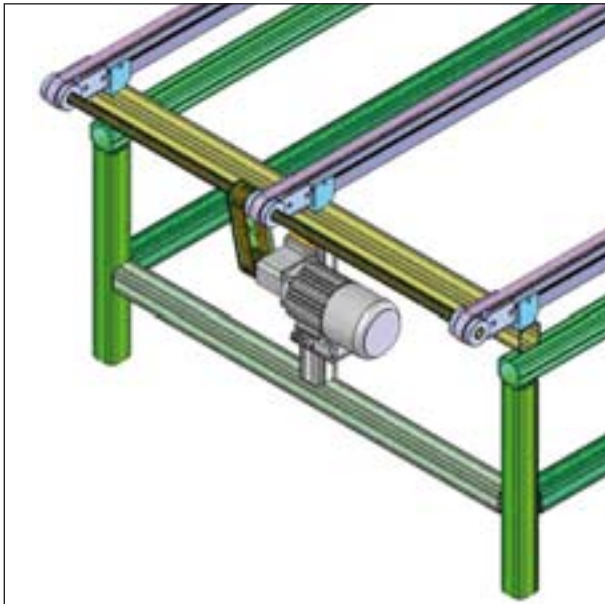
SUSTAINABILITY Montrac is not only a proven, economical solution for very complex and expandable production and logistics systems; Montrac is also very attractive for smaller and simpler production processes. Because of its static tracks, Montrac is also cost-efficient, which pays off particularly with lower cycle times. Another plus is the low power consumption of Montrac systems: Compared to a conventional conveyor system, Montrac uses only 1/20 of the power. When it comes to maintenance, Montrac also sets the standard: Montrac is the only transport system worldwide that is completely maintenance-free.





**THE ADVANTAGES OF
THE QUICK-SET MOUNTING SYSTEM**

MODULARITY Quick-Set is a patented mounting system with cross-product compatibility and flexibility. Quick-Set's proven dovetail fastening system allows rapid, uncomplicated assembly of all Montech products without machining the section ends. A variety of mounting options can be realized using a minimum of individual elements (10 base elements).



QUALITY Quick-Set is suitable for precise, dimensionally stable connections. Quick-Set connections are vibration proof. Its dovetail connections can be subjected to larger loads than T-slot connections. With the bolts tightened to the correct torque, the resistance to displacement between two interconnected sections is 3000 N.

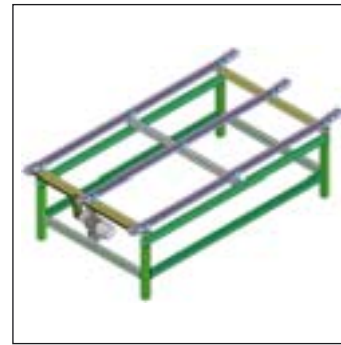
QUICK-SET SIZE 40 Quick-Set will allow easy, fast and flexible adjustments. No drilling, no pinning required. All clamping bolts will always be accessible in the assembled structures. The structures can be easily disassembled at any time and reused; thanks to the clamping connection, there will be no drilled holes.



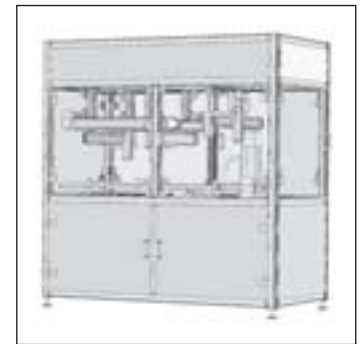
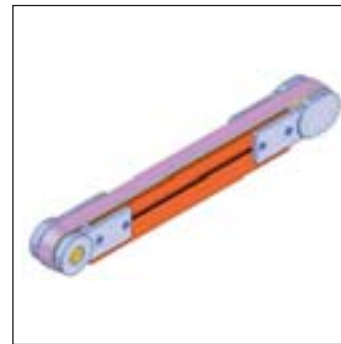
QUICK-SET SIZE 20 The smaller size 20 allows configurations and light-weight support structures in the smallest of spaces.



MODULE TRANSFER The Montech system structure will send your modules on the right path.



AUTOMATION CELL Modular or system solutions can be designed quickly and easily with our modular system. The patented dovetail connection is used in all products, creating a flexible and efficient connection basis without adapter plates.





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