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# Benefits of Precision Link Conveyor Manufacturing



White Paper

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Motion Index Drives, Inc. line of precision link conveyors are built to be the heart of a linear manufacturing machine requiring high accuracy, speed, and quality. The precision link conveyor is a conveyor designed to have an automation process done on it, from start to finish. The conveyor indexes a precise stroke (from a few millimeters to a meter). After the indexing is done, equipment mounted around the conveyor performs a function to a product not just at one location, but at multiple locations along the entire length of the conveyor. This way when the product is first mounted to the conveyor, it is not complete. But, upon reaching the end of the conveyor, the product is complete. The MID precision link conveyor is not designed to feed parts to a line, nor is it designed to be used in applications where accuracy is not critical. The standard precision link conveyors provide an accuracy of  $\pm 0.08\text{mm}$  ( $\pm 0.003''$ ) at each and every link OR less! This is measured on each and every conveyor manufactured to ensure it meets this accuracy. The conveyor was designed and engineered to be the heart or chassis of a machine where it performs a very important function of both moving and positioning a product at multiple stations with flawless operation.

The MID precision link conveyor is manufactured with an inner structure manufactured from aluminum extrusion. The aluminum extrusions allows for extremely long lengths that are straight and rigid while also being extremely friendly to mount accessories and customized options. Mounted to the central framework is the link track. The MID conveyor makes the track out of steel, where it is machined, hardened, and ground. The links in the conveyor are made of a very high grade aluminum. Aluminum links have many benefits including having a third the mass of steel, thus a third the internal inertia of steel links. This allows the drive unit (an MID index drive or high accuracy reducer) to be smaller and/or allows the customers tooling to be heavier without having to oversize the drive unit or jeopardize index time. Each link contains 4 sealed cam followers that are lubed for life. These are pressed into needle bearings at the joints of the links to there is no wear or moving parts contacting the aluminum links themselves.



*Link and Track Section*

Each and every precision link conveyor is manufactured to the customers' requirements. Special, non-standard requests are always handled through the design phase of the project. These special requests could be tapped holes, mounting plates, thru holes in the chassis, special drive units, special shaped conveyors, custom pitches/strokes, and custom coatings on the components. The MID standard pitch conveyors also offer custom link cover plates to prevent particulate intrusion to the track while also providing a safety feature by eliminating pinch points around the radius.



*Custom Conveyor  
with Unique Geometry and 37.5 Pitch*

MID Precision link conveyors were designed to be used in high volume manufacturing environments to provide millions of cycles without any maintenance or issues. The only maintenance on the conveyor is to adjust the tension of the chain annually and if the conveyor is used in a dirty environment, clean the conveyor as required.

Typical applications of the conveyor are in the manufacturing or consumer goods, assembly machines of intricate products (i.e. dental floss, razor blades), printing applications (pad printings, marking), medical devices and components, and the automobile industry in powertrain and component manufacturing.



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