

# The **STELRON RWB** Assembly Chassis

**R**WB stands for Recirculating Walking Beam. This palletized chassis is primarily targeted for assembly operations though other uses, such as packaging, are possible. Cycle rates are from 15 to 100 indexes per minute.

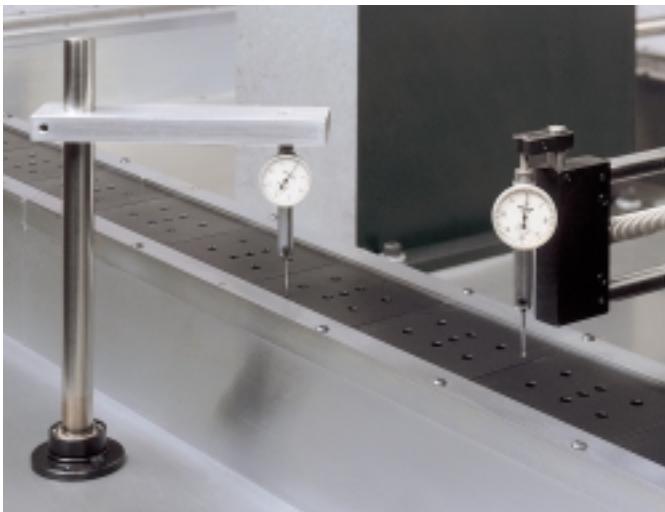
The patented Stelron RWB base is a synchronous, linear, cam actuated assembly chassis. The design of the RWB is unique in the marketplace. The product is either fixtured in or attached to the pallet. The pallets are moved in a rectangular pattern around the table top by synchronized cam actuated walking beams. This walking beam engages each pallet with dowel pins and the pallets ride in tool steel guideways. The walking beam indexes the pallets horizontally one pallet pitch. Before the walking beam dowel pins dis-engage, a mechanically synchronized locking beam engages each pallet with two low clearance shot pins. This design separates the moving and locking functions of the chassis and results in superior long term accuracy in all 3 (x,y,z) directions.

The chassis accuracy of +/- .0015 is available at all stations including the ends but excluding all four corners. Users report long term accuracy and repeatability to be very stable. They have not found it necessary to re-locate stations as is the case on link, chain or band systems. These other systems are subject to drift as the link pivots wear and the individual link/pivot tolerances begin to accumulate. Also the same chain or link system that indexes the load must also provide the final accuracy whereas in the RWB the locking beams only function is to provide shot pin accuracy.

The indexing mass of the RWB chassis is very low due to the light weight Delrin® pallets. The coefficient of friction of the pallets is very low at approximately .16 to .2. Each leg of the chassis indexes 90 degrees out of phase from all the others, avoiding the “everything at once” indexing of competing designs. The walking and locking beams, actuated by the same cam and connected by a rocker arm, are balanced to each other. All of the above results in high speed capability, minimal input power requirement / fluctuation and low wear.

The walking beams are driven by Stelron T-400 modified Translators which incorporate oversized ball

bearings and cam followers thereby providing long life. Typical RWB applications require the T-400 to exert 10 to 20 lbs per unit during the index period. Whereas the T-400 has a thrust rating in excess of 200 lbs. This operation in the 5 to 10 percent range explains the long life experienced by RWB users. Standard index periods as low as 90 degrees (or less) are available due to the large diameter cams employed in the T-400. The Stelron Translator also provides true modified sine cam motion directly to the indexing mass. Competing chain, link and band systems impart the index motion through linkages, levers or sprockets. These indirect systems do not provide true “in line” modified sine motion.



The RWB offers considerable application flexibility. The pallets can be accessed from all sides and from underneath at certain locations. An anvil can also be included under the pallet to accommodate pressing operations. Pallet sizes are available from 4 through 8 inches (or larger). Pallet and table top thickness can also be varied. A wide range of table lengths (up to thirty feet or longer) and widths are available since modules can be combined. The flat table top and linear transfer design simplifies tooling layout. Ample space between pallet tracks allows pick & place, tooling and other mechanisms to be mounted inside the tracks. This improves operator and maintenance personnel access and allows for more efficient use of a given size chassis.

One of the most important features of the RWB Chassis is it's ease of integration for the machinery builder. Most RWB chassis incorporate optional pick & place and cam motions already mounted, timed and powered up. (Stelron has a broad range of standard single and dual axis linear plus rotary/linear motions available.) The machine builder only needs to add the required special tooling. Feeder bowls are also easy to integrate using the outer “shelf” of the RWB for dead nests or cross shuttles making for a single alignment point of the feeder track. These features help reduce unwanted special engineering, special parts and reduce build time for the project.



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