



## **HORIZONTAL CAROUSEL (LSRS)**

An automated storage and retrieval device consisting of a series of shelving sections (bins) mounted on a horizontal, closed-loop oval track. When activated, the bins rotate to bring requested items to the operator or automated picker.



### **Bottom Drive Carousel**

Bottom drive carousels are horizontal carousels engineered for larger live loads and heavier duty cycles.



### **Twin Bin Carousel**

Twin bin horizontal carousels are suited for small part picking applications requiring higher density, selectivity and throughput.



### **Top Drive Carousel**

Top drive horizontal carousels are designed for standard and light duty applications.



### **Pallet Carousel**

Pallet horizontal carousels store heavy-duty pallets for picking, buffering, and building split-pallet loads.

### **Labor Productivity**

*Gains up to 800% over the use of conventional shelving and racks* are accomplished by eliminating wasted walk and search time.

### **Inventory Accuracy**

By providing accurate and timely inventory data, both the inventory levels and shortages can be reduced dramatically

### **Space Reduction**

The carousels recover lost floor space by achieving the same storage capacity in *30% less space* than with static shelving.

### **Fast Payback (ROI)**

Increased efficiencies allow companies to *recover their investment within 12-18 months*.

### **High Throughput**

Picking rates up to 500 lines per hour, per operator allow *a single worker* to be *as productive as eight workers* picking from static shelving.

### **Extended cut-off times**

Orders can be prioritized by computer based on shipping times and thus increases the ability to *ship more orders in a day*.

### **Improved Service to your Customers**

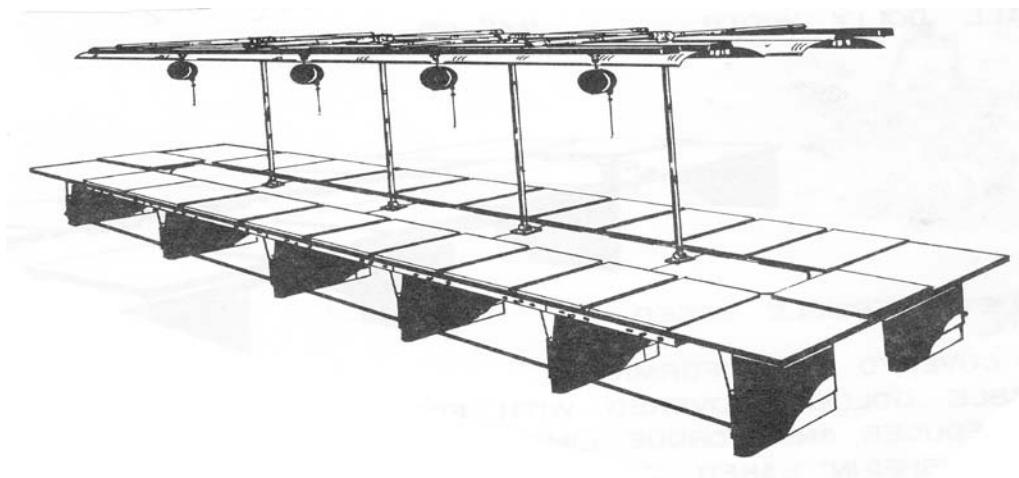
Integrating inventory control software, light directed picking, and bar code scanning *assures up to 99.9% accuracy*.

### **Equipment Reliability**

Durable and well engineered, carousels *provide nearly 100% uptime*.



PACED OVERHEAD MONORAIL SYSTEM

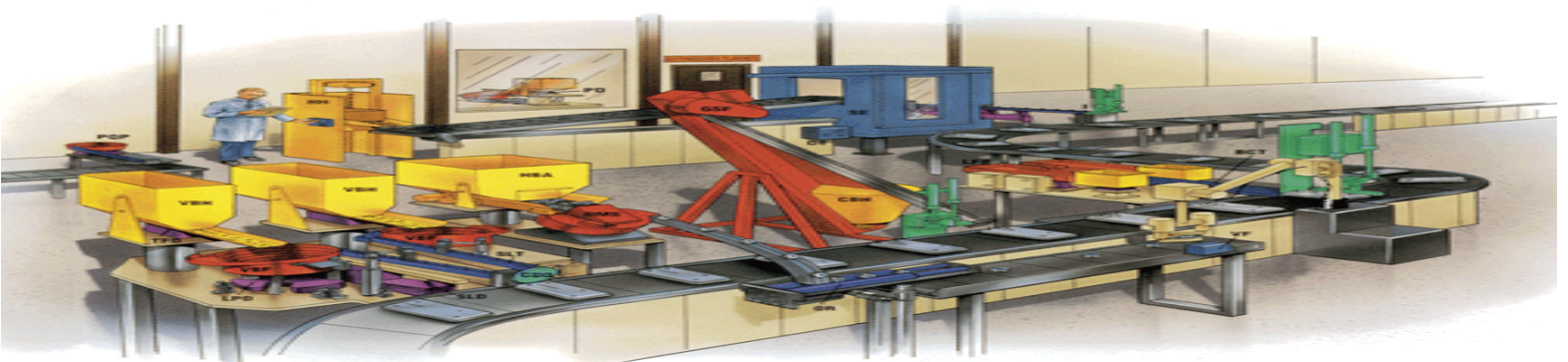


PACED RECTANGULAR ROTARY SYSTEM

## Product Automation

Work station, conceptual design, system development and implementation

Activity/Conveyor Type	Number of Installations	Most Reputable Company	D/L Savings	Prominent Feature
Bulk Hopper Feed, Vibratory Bowl Part Positioning and Robotic Placement	15	ITI	50%	P/P Robot



PICK AND PLACE ROBOTIC WORK CELL



## Direct Labor Control Systems

Development of unit cost expectation through time study, hourly accountability and shift output requirements.

Optimization of workflow, personnel and receipt of material

Activity/Conveyor Type	Number of Installations	Most Reputable Company	D/L Savings	Prominent Feature
Industrial Engineered Standards and Methods	50	Singer	15%	Unit Cost Reduction
Layout	41	Ballantine	10%	Capacity Increase
Short Interval Scheduling	32	Magnavox	10%	Shortages Corrected
Labor Reporting	8	TE Tech	5%	Scrap Identification
Staffing	38	DORMA	10%	Cross-Trained Operators
Just-In-Time	8	Melcor	10%	Inventory Reduction
Industrial Incentives	13	Graco	15%	Team Effort

