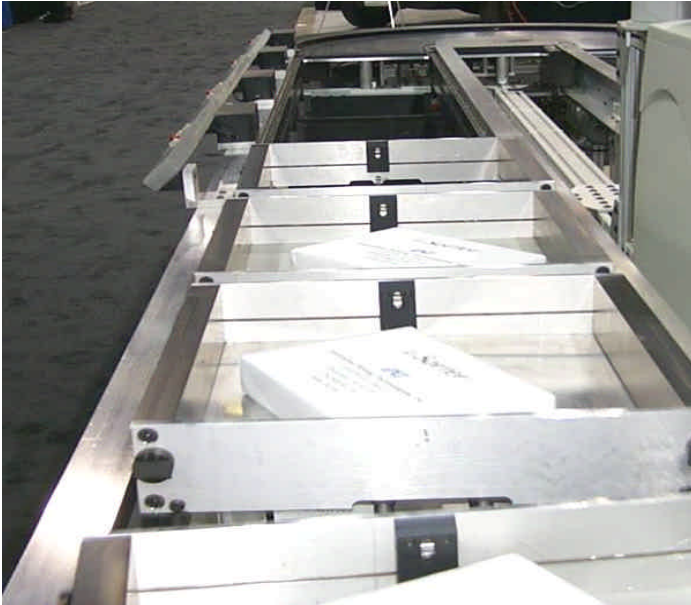


*i-Sorter*TM

High Speed Sorter



Revolutionary Design

The *i-Sorter*TM revolutionizes the sortation industry with IPTI's patented technology (U.S. Patent 6,782,382). The *i-Sorter*TM is a bomb-bay type sorter that discharges its contents at the desired sort location through a false bottom in the tray using gravity as the power source. The *i-Sorter*TM is unique because the sort trays are not connected to one another, and are moved through the system asynchronously on a low cost parallel chain conveyor.

Intelligent Tray Technology

The key element to the *i-Sorter*TM system is the "intelligent tray" or *i-Tray*TM. The *i-Tray*TM utilizes on board intelligence to perform the sorting operation. As such, each tray in the system knows where it is supposed to deliver its contents. As each *i-Tray*TM progresses throughout a conveyORIZED sort loop, it identifies the locations it is passing on the fly. When the *i-Tray*TM determines that it is at the proper sort location, it activates the trip mechanism and delivers the item to the sort location. Because the *i-Tray*TM knows where it goes, the system does not need to track each tray or item through the system as is required with synchronous systems. This eliminates control I/O required to sense and track sort trays and items. It also eliminates system purging (**JACKPOT LANE**) that is required by synchronous systems when the system is stopped for any reason. In fact,

any *i-Tray*TM can be removed from the system and replaced at any time and the *i-Tray*TM will still proceed to the proper sort location.

Modular Simple Design

The *i-Sorter*TM system is designed to be modular to maximize flexibility. The system is constructed using ten foot long parallel chain conveyor modules and powered roller turns. The parallel chain conveyor utilizes a simple common shaft drive and an innovative tensioner that

Applications

- Batch Pick and Sort Order Fulfillment
- Returns Processing
- Mail Sortation (BMC and Zip Code)
- Cross Docking
- Shipping/Order Consolidation

utilizes a counterweight, eliminating the need to ever tension the main conveyor chains.

A passive reset mechanism is utilized to return the bomb-bay doors on the *i-Trays*TM to the locked position. The doors are simply folded back into the locked position as they are conveyed over special guides at the end of each linear conveyor run. A simple design that requires no maintenance.

All sort locations are supplied with a 40 character (20 characters x 2 lines) LCD display that is used to display sort location status and other prompts to users that are responsible for removing completed items from sort locations. This display also includes a high intensity LED indicator that is used to draw user attention to specific sort locations, for example when an order is complete and needs removal. Five pushbuttons are also available at each location that allow users to interact with the sort location, for example, ceasing sortation to a location while a mail bag is being changed.

Each sort location is also supplied with eight digital inputs and eight digital outputs that can be programmed to interface with external devices such as divert gates, beacons, sensors, etc. This feature provides great flexibility.



Innovative Picking Technologies, Inc.

W1236 Industrial Drive
Ixonia, WI 53036

Ph: 262-567-6525 / Fax: 262-567-6963

www.ipti.net / E-mail: info@ipti.net

Manufactured under U.S. Patent 6,762,382

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Three standard accumulation configurations are available on the *i-Sorter*TM. The first option is a straight drop, where items are deposited directly into a container (tote, box, mailbag, etc.) located directly beneath the sort location. The second option includes a bi-level

Features and Benefits

- 180 ft/min sort speed provides 90 to 150 sorts per minute
- Three standard tray sizes: 9 x 12 in., 14 x 18 in., and 20 x 26 in.
- Handles items to 10 lbs.
- One or two sort locations per drop.
- Three standard drop designs minimize product damage.
- Vertical stacker option eliminates product damage and speeds packing.
- Simple and durable design provides exceptional reliability and requires minimal Maintenance.
- Modular design can be configured from 10 to 1000 sort locations.
- Flexible plug-and-play design allows sort locations to be easily added as additional locations are needed for future growth.
- System utilizes IPTI's BUS system and includes an LCD status display and control module at every sort location.
- Standard manual and automatic induction stations provide ergonomic induction.
- Standard software interfaces to any system and is ideal for end users and system integrators.
- Lowest cost sorter available provides very fast return on investment.

chute with a diverter beneath the drop point, allowing two containers to be placed at each sort location. This provides the ability to minimize the size of the system by better utilizing floor space and to reduce the cost of the system because of the increased density of the sort locations. The third option is an automated vertical stacker. This option is utilized when the items being sorted of regular rectangular shape such as compact disks, DVDs, Video Cassettes, Books, software, etc.

With this design, items slide down a shallow decline and accumulate in a vertical stacking mechanism. This option greatly reduces the time required to pack items. The flexibility of the *i-Sorter*TM allows any of the three discharge methods to be intermixed on the same sorter! Thus regular shaped items can be stacked while irregular soft goods can be handled by the chute options.

Three standard size *i-Trays*TM are available to facilitate varying product sizes, 9 x 12 in., 14x 18 in., and 20 x 26 in. *i-Trays*TM can handle up to 10 pounds per tray.

Three different induction methods are available on the *i-Sorter*TM. The first method (manual induction to tray) is used for systems that can operate at speeds allowing induction operators to place items directly into empty *i-Trays*TM as they pass. Items may be scanned manually with a hand scanner or scanned automatically by a bar code scanner mounted above the *i-Sorter*TM. The second method (automatic induction) is used when the *i-Sorter*TM speed prohibits placing items directly into moving *i-Trays*TM. The induction operator simply places items into hoppers located above the *i-Sorter*TM and the hopper(s) automatically place items into *i-Trays*TM as they pass. The third method (automatic induction) is used when items need to be inducted from another piece of automated equipment such as a packaging or labeling machine.

Simple Interface

Because the *i-Trays*TM are intelligent, most of the control logic resides in the *i-Tray*TM, thus interface to the *i-Sorter*TM is very easy. A simple RS-232 or Ethernet interface is provided to allow the control software to notify the *i-Sorter*TM controls as to the desired locations for each item being inducted. IPTI can supply full turn key controls for any application or allow the user or integrator to supply their own.

With IPTI's *i-Sorter*TM, users can realize the benefits of automated sortation for order fulfillment, mail sortation, returns processing and other sortation uses at considerably less capital investment and maintenance costs than any other sorter available. Contact IPTI today to discover how the *i-Sorter*TM or other technologies supplied by IPTI, can make your order fulfillment process more efficient and accurate.