

**WAKEFIELD EQUIPMENT PRESENTS**

Designing Manufacturing Assembly Lines:  
**Window and Door  
Assembly Lines**

# Window and Door Assembly Lines

You can produce windows and doors in a flexible and economic way--and at the highest quality with a properly designed Window and Door Assembly Line.

Using the right assembly equipment can lead to:

- ▶ Shorter run times
- ▶ Steady workload
- ▶ Smooth material flow
- ▶ No searching and sorting
- ▶ Lower inventory needs

And this means for you: higher profitability

# Planning a Window and Door Assembly Line: Mistakes to Avoid

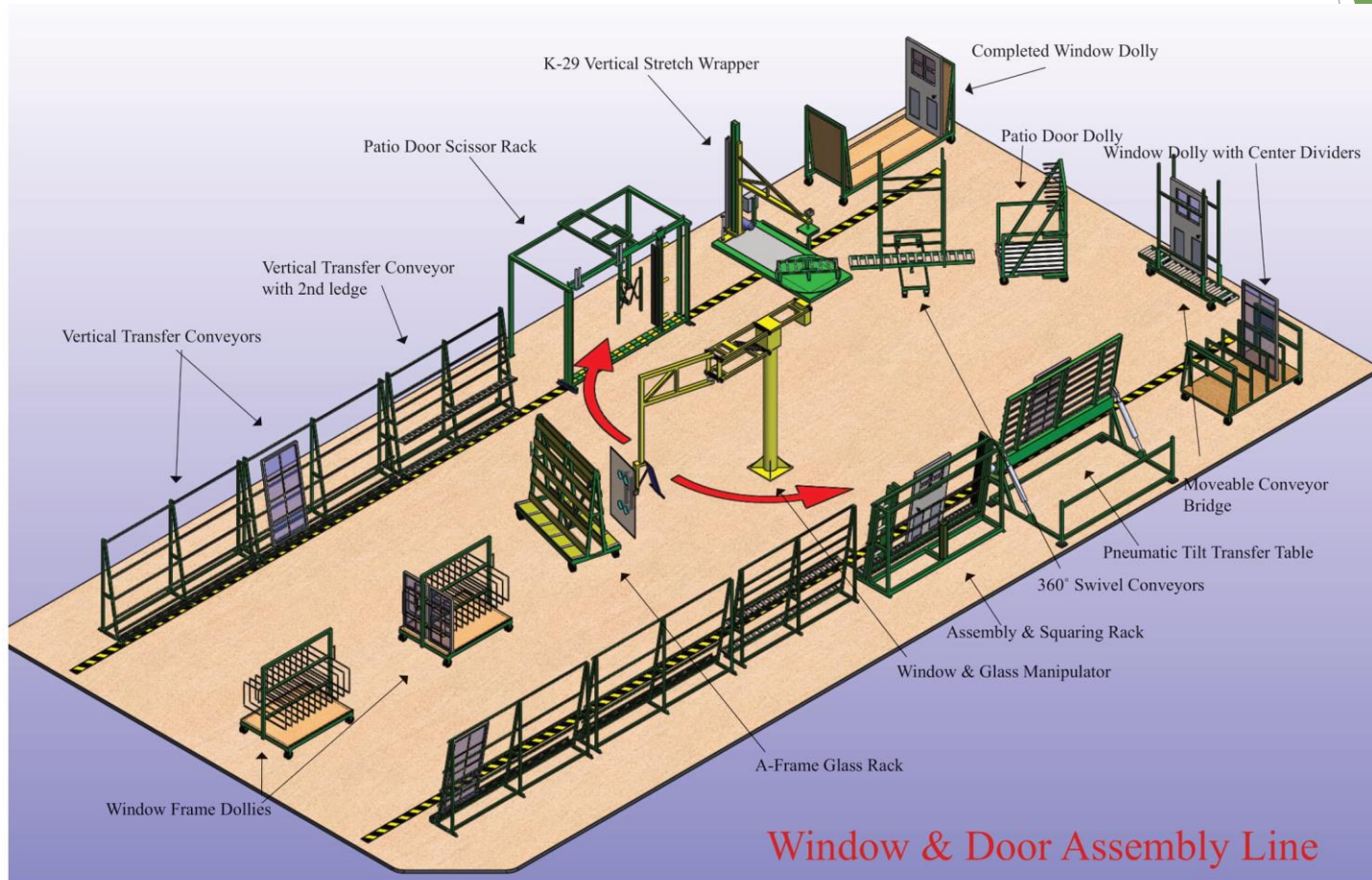
- ▶ **Poor Planning**
  - ▶ Planning must be deep enough to answer all possible questions about a new line.
  - ▶ Plan for flexibility and changes, since volumes and demand are variable.
- ▶ **Failing to incorporate material flow into the layout**
  - ▶ Create simple material delivery routes and pathways throughout the facility that connect the processes.
- ▶ **Bigger isn't always better**
  - ▶ Right-sized equipment and facilities are the key.

# Sample Window and Door Assembly Line

**Our goal is maximum speed and efficiency in the smallest possible footprint.**

- ▶ Joins together all elements of the production line into a systemized technological solution.
- ▶ Modular design to accommodate space constraints, material flow.
- ▶ Components are versatile and custom-built to specifications.

# Window and Door Assembly Line



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# Planning a Window & Door Assembly Line:

## Sample Equipment List

- ▶ Window Frame Dollies
- ▶ Vertical Transfer Conveyors
- ▶ Vertical Transfer Conveyor with 2<sup>nd</sup> ledge
- ▶ Assembly and Squaring Rack
- ▶ Pneumatic Tilt Transfer Table
- ▶ 360 Swivel Conveyor
- ▶ Patio Door Dolly
- ▶ Window Dolly with Center Divider
- ▶ Casement Assembly Rack
- ▶ K-29 Vertical Stretch Wrapper
- ▶ Completed Window Dolly

- ▶ **Open Back Assembly Rack**
  - ▶ Extremely affordable
  - ▶ Able to handle casements, which is rare
  - ▶ Vertical and horizontal clamping available
  
- ▶ **Closed back, Angled Assembly Rack**
  - ▶ Affordable and versatile
  - ▶ Can be built to include a pneumatic tilt feature
  - ▶ Ideal for handling large windows or those requiring milling in a horizontal position

## Vertical Assembly & Squaring

Assembly racks come in two basic designs: for hung windows with a 15 degree tilt and the open back design for casements or swing patio doors. The hung, or standard rack, also has a pneumatic lift (two feet of travel) option and can tilt (see below) to the horizontal.

Another option on the standard rack is retractable stops which recess for a continuous production flow. This is ideal when using a complete transfer system (see next page) for an un-interrupted and continuous production flow.



### Standard Assembly Rack

- Holds and squares window during assembly
- Ergonomic design tilts back 15 degrees
- Has protective back and bottom strips
- Options include retractable sides and tilt

### Casement Assembly Rack

- Open back for casements & swing doors
- Positioned 90 degrees from floor
- Vertical member applies pressure
- Available in different sizes





## Double-Sided Assembly Rack

### Double-Sided Assembly Rack

Just one more innovation that we've added to our full line of squaring and glazing racks. With several options available, these racks can be custom made to suit any application. If you need retractable squaring members, pneumatic lift, or a casement-type rack to access both sides of window, door, or patio door, we've got you covered.



## Tilt & Horizontal Assembly

Pneumatic tilt squaring racks can be mobile (shown at right) or stationary. These are basic variations on our standard assembly rack and have some of the same options such as retractable stops.

Also available are work tables for assembly from tilt to flat tables (far right). These are economical ways to handle large units, and speed up production.



### Pneumatic Tilt & Press Racks

- Ideal for large windows and mulling
- Protective HDPE strips on back
- Rail moves as vertical or horizontal
- Casters and floor lock are optional

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## Window & Door Transfer Systems

Effective use of frame or sash transfer conveyers eliminate labor and provide an excellent work in process area. The vertical design typically has rollers. An allowance for nailing fins can be made. Horizontal conveyers can spin freely or be powered.

Hold down clamps can be added to create stability when needed. Transfer arms are available to merge sashes and frames into the same line for final assembly.

The tilt version can have a fixed ledge as shown which remains in place to minimize interference with the operator. This same feature can be incorporated into our pneumatic tilt assembly racks shown on the previous page.



### TILT TRANSFER TABLES

- Moves from vertical to horizontal
- Pneumatic or counter-balance
- Back and ledge covered with HDPE or rollers
- Built according to specifications



### VERTICAL TRANSFER

- Helps flow throughout shop
- Ledge smooth or rollers
- Ledge height varies for sashes or frames
- Available with hold down clamps or transfer arms



### HORIZONTAL TRANSFER

- For frames, sashes or completed units
- Top rollers have non-marking PVC
- Legs adjustable for height
- Built to any size or dimension

# Contact Wakefield

Contact our sales team to learn more about how Wakefield Equipment can help you design your window and door assembly line!

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