

Window Assembly Lines

With today's labor market, no aspect of the manufacturing process should be left unstudied. The assembly process is often one of the more labor-intensive operations where small improvements can result in big rewards.

Wakefield offers several products to help fabricators in these areas. One is a line of window assembly and squaring racks, transfer conveyers and work tables.

Our open back assembly rack is unique for several reasons. First, it is extremely affordable. Second, it is one of the few racks able to do casements. One variant on this rack is a system that has both vertical as well as horizontal clamping. With the addition of scissors to spread out a fixed panel on patio doors, it really helps the assembly process.

Our closed back, angled assembly rack is also quite affordable, but is designed for single hung, double hung and slider windows. Closed back assembly racks can also be built to operate with a pneumatic tilt feature. This can be extremely helpful with larger windows or those which require mulling in the horizontal position.

We also offer horizontal transfer tables. Besides moving product, these items facilitate assembly operations. A stationary assembly table with adjustable hold down pins to keep the product in place is also available.

Another way to move product through the assembly process is by using vertical conveyers. These are designed for either frames or sashes. The major difference is the height of the bottom ledge. This ledge can be smooth H.D.P.E. or rollers. Rollers can also be grooved to accommodate nailing fins required for new construction windows.

Of course, inserting glass may also be simplified even before you get to the assembly process. Our automatic glass insertion equipment is ideal for large I.G. units for patio door panels or picture windows, and can triple your productivity.

Besides the products which follow, we encourage you to refer to the section labeled "**Glass and Material Handling**", and "**Stretch Wrap Equipment**". Within these sections, there are product sheets showing the wide array of items we can supply, such as window dollies, general handling equipment, and stretch wrapping machinery. Remember, we're here to help.

WAKEFIELD EQUIPMENT

Window Assembly and Transfer Systems

Increase productivity and quality with squaring racks, conveyors and transfer systems at an affordable price.

Model K-280 - 8'

* 2" DIA x 8' Long Roller at 12" Center
* Paint: Hot Dip Galv

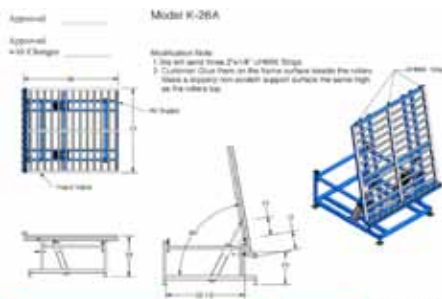


Wakefield Equipment
Contact: 1-800-441-4444
Phone: 402-475-3238
Fax: 402-475-3242
Web: www.wakefieldequipment.com

WAKEFIELD EQUIPMENT

Model K-28A

* 2" DIA x 8' Long Roller at 12" Center
* Paint: Hot Dip Galv

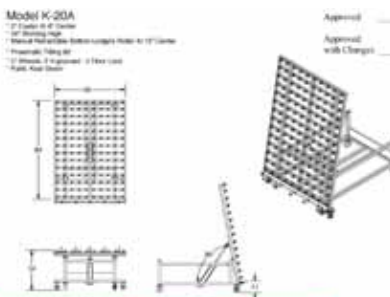


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Model K-20A

* 2" Dia x 8' Roller
* 12' Working Height
* Material Not to Exceed 800 lbs per 12' Center
* Paint: Hot Dip Galv

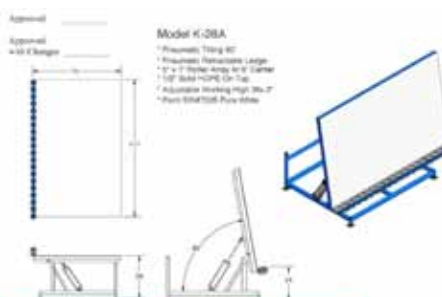


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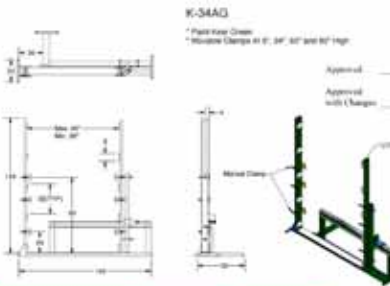


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WAKEFIELD EQUIPMENT

K-34AG

* Paint: Hot Dip Galv
* Maximum Capacity at 6', 8', 10', 12' and 14' High



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WAKEFIELD EQUIPMENT

K-35A

* 12 Rollers With Direct at 8' Spacing, 12' Center
* 2" Centers at 8' Spacing, 12' Apart
* Working Height 12'



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WAKEFIELD EQUIPMENT

WINDOW ASSEMBLY LINES**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 and designs

**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, we've got you covered.

- A-Frame design ideal for space limitations
- Use for squaring, glazing and any other application
- Have retractable members or pneumatic lift on either side
- Built for use on any size window or door

**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 which need mulling
- Protective HDPE strips on back
- Rail moves as either vertical or horizontal
- Casters and floor lock optional

WINDOW ASSEMBLY LINES

Window & Door Transfer Systems

Effective use of frame or sash transfer conveyers eliminate labor and provide an excellent work in process data. 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.



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

Tilt Transfer Tables

- Easily move window from vertical to horizontal
- Either pneumatic or counter-balance
- Back and ledge covered with HDPE or rollers
- Built to any size according to specifications

Horizontal Transfer

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

Tilt & Horizontal Assembly: Tilt Work Tables

- For positioning large size windows
- Counter-balance or pneumatic tilt
- Optional casters and floor lock
- Built to any size



Flat Work Tables

- Keeps product stable
- Adjustable hold down pins
- Middle platform for storage
- Variety of sizes

WINDOW ASSEMBLY LINES

Patio Door Assembly Racks

The racks previously shown work extremely well for patio doors as well as windows. Shown here is another specialty rack which is similar to the casement rack previously shown but with the added feature of scissors to hold the fixed insert while the movable unit is put into the frame.



It uses both horizontal and vertical clamps to hold the frame in place. With the fixed member locked in with scissors, attaching the movable panel becomes simple and allows for testing.

Patio door assembly often requires that the fixed panel be positioned prior to placing the moveable panel into the frame.

Mechanical Panel Assembly



This rack is ideal for assembling large mechanical units such as patio door inserts or large non-operable units.

The glass is laid on the rotator in the horizontal position. The rotator lifts and turns for easy application of boot glazing and both the top and bottom

rails. The squaring members then apply pressure to insure a tight fit. When the operation is complete, the finished product is tilted up to the vertical to be transferred down the line.

Mechanical units have screw together rails which are usually assembled directly over the glass, and require a specifically designed squaring rack.

Vertical Transfer

By adding rollers to the surface of a pneumatic tilt table, units can be taken off the vertical line and then transferred horizontally into a wrapper. In this operation, rollers would typically also be on the bottom ledge. Conversely, a unit coming out of a wrapper or a horizontal assembly line can be tilted down to easily slide into a window dolly for easy transport to the shipping area. As with all roller conveyers, the rollers are non-marking for use with vinyl, wood or aluminum. Oversized cylinders for heavy windows and closer roller spacing are a couple options to consider.



Transfer can be performed in any direction, or for any purpose.

Rotation or Turning

Quite often larger units will have to be turned. This is common with patio doors which require that the movable panel overlaps the fixed panel prior to wrapping. The rotator shown below is normally used when the product is transferred after assembly from a vertical conveyer and then placed into a vertical stretch wrap machine.



Rotators along with tilt tables enable one worker to perform the job normally required of two.

Conclusion

The previous pages highlight our assembly equipment offering. They represent the most common ways fabricators use to increase productivity and reduce costs.

Let us help with your specific needs by giving us a call. We know the industry, and will be glad to offer suggestions, and alternatives to your production requirements.