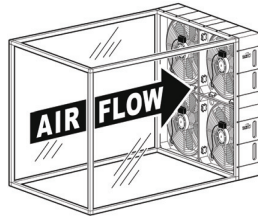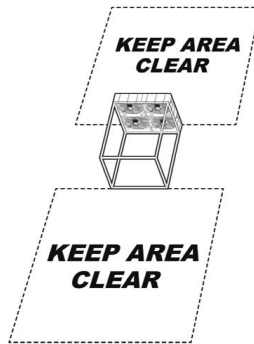# Wind Tunnel
(Order Code KW-TUN)

What's Included

- 4 wind power units (fans)
- 4 (vertical) box tubes with hubs (they look like a Y on both sides), some have hook-and-pile fasteners around the sides.
- 8 (horizontal) box tubes, two have rubber bumpers on the bottom, some have hook-and-pile fasteners around the sides.
- Wind Tunnel vinyl covering with bungee cords attached
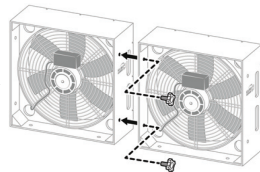- 18 connecting screws

The wind speed of the wind tunnel is very sensitive to exterior obstructions and airflows. Ideally, it should be set up in an interior space and away from any outside fans or ducts. An $8' \times 10'$ clear area in front and in back is desirable.
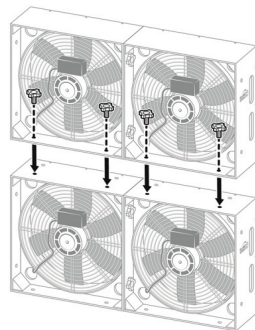

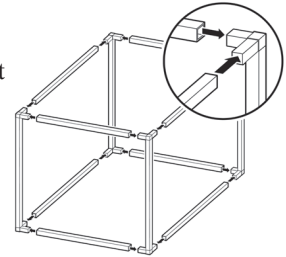### Wall of Fans Assembly Instructions

Each wind power unit is a high velocity fan mounted in a modular wooden enclosure. Each has rubber feet on the bottom and is positioned to blow air away from the back of the wind tunnel (sucking air through the tunnel).
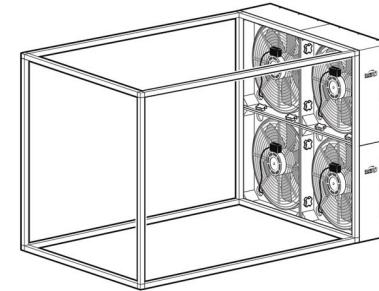

Assembled correctly, the fan speed adjustments are located in the tunnel. The rubber feet of the upper units fit into the holes on top of the lower units, and the handle holes face outside toward the back. Bungee tie slots are around the sides and top of the assembled fan wall. There are threaded holes on the inside sides and bottoms of each wind power unit. The holes line up and are meant to lock the fan walls together using the connecting screws.
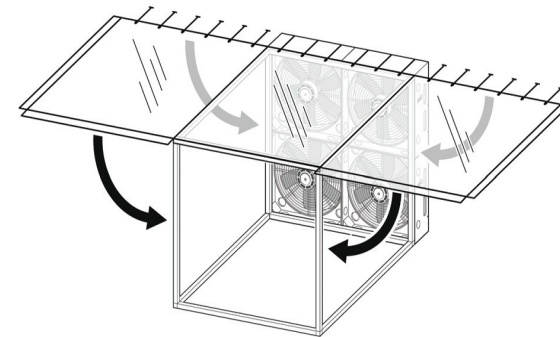

The Wind Tunnel is a tube frame with a vinyl skin stretched over it. To assemble, position the four box tubes with hubs vertically, and use the remaining eight box tubes to connect the vertical tubes. When placing the horizontal tubes, orient them so that the hook-and-pile fasteners face toward the inside of the tunnel. The horizontal tubes on the bottom side of the tunnel should be oriented so that the hook-and-pile fasteners face out. They should also have bumpers on them.
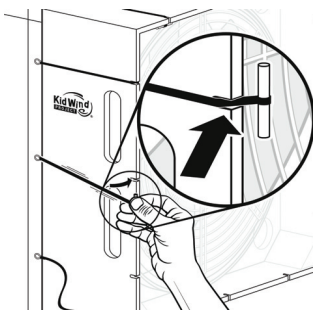

Don't worry if the frame seems a little wiggly or loose. Make sure all the tubes are pushed into the hubs. When the vinyl covering is put on, it will compress the frame and tighten it up.
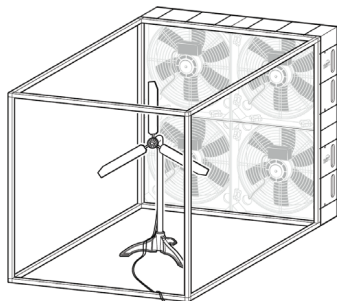

The vinyl covering easily picks up dirt, so make sure the floor is clean before unrolling the vinyl covering on the floor. One of the long edges has three strips of hook-and-pile fasteners on it. Place the covering on top of the frame with the hook-and-pile fasteners pointing down towards the floor. Roll the center top hook-and-pile fastener flab over the front of the frame and attach it to the hook-and-pile fastener on the inside of the frame. Do the same with the sides of the wind tunnel.
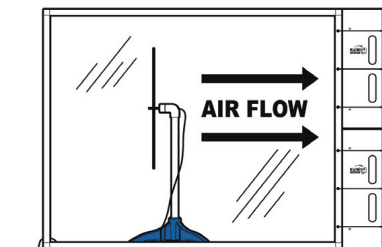
After you have secured the hook-and-pile fasteners along the edges, stretch the bungee cord connections into the fan wall notches. Start with the center top and work your way across and down to the bottom corners.

Plug all the fans into a power strip. Fans can be individually adjusted at the motors, although we recommend using the high setting. The average wind speed is approximately 3.6 m/s at a distance of 30 cm from the opening.

The fans running at high speed are noisy and windy. You can either leave them on during wind turbine performance testing, or shut them off between tests. Use the switch on the power cord to turn all the fans off and on at the same time.
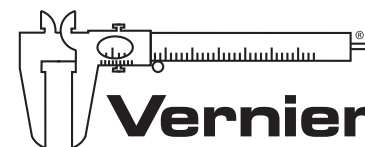

Additional Resources
For more information about the Wind Tunnel, including a Wind Tunnel Set Up video, visit www.vernier.com/kw-tun

NOTE: Vernier products are designed for educational use. Our products are not designed nor recommended for any industrial, medical, or commercial process such as life support, patient diagnosis, control of a manufacturing process, or industrial testing of any kind.

Warranty
Vernier warrants this product to be free from defects in materials and workmanship for a period of one year from the date of shipment to the customer. This warranty does not cover damage to the product caused by abuse or improper use.

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