CL-011 Three-flag indoor draft-locating stand

Hold three very light tissue telltales on a stable portable frame to compare local air movement without a flame or smoke source.

US customary dimensions control. Metric equivalents use 1 in = 25.4 mm. Original bounded design, not a prototype-tested or load-certified plan. Read limits and checks before cutting.

Application and limits

Gentle indoor observation only; not an anemometer, combustion test, pressure test or ventilation safety instrument.

Materials and finished cuts

Part / quantity	Finished size	Stock and orientation
P01 Base | 1	10 x 6 x 3/4 in 254 x 152.4 x 19.05 mm	measured 3/4 in plywood. exterior-bond plywood for protected non-food-contact fixtures
P02 Upright | 1	16 x 1 1/2 x 3/4 in 406.4 x 38.1 x 19.05 mm	1 × 2 in board. sound untreated cedar or other durable untreated wood; no unknown salvage
P03 Top crossbar | 1	8 x 1 1/2 x 3/4 in 203.2 x 38.1 x 19.05 mm	1 × 2 in board. sound untreated cedar or other durable untreated wood; no unknown salvage
P04 Upright foot blocks | 2	3 x 1 1/2 x 3/4 in 76.2 x 38.1 x 19.05 mm	1 × 2 in board. sound untreated cedar or other durable untreated wood; no unknown salvage
P05 Tissue telltales | 3	3 x 1/8 x 0.001 in 76.2 x 3.175 x 0.0254 mm	light tissue paper. Thin dry tissue; 0.001 in diagram thickness is illustrative, not a purchased thickness specification. Strip length/width control.

Fasteners, purchased components and consumables

One #8 x 2-1/4 in upright/base screw, predrilled

4 #8 x 1-1/4 in screws for foot blocks through base, 2 per block

2 #6 x 1-1/4 in screws for crossbar through its 3/4 in thickness into the upright

3 small smooth removable paper clips and 3 tissue strips 1/8 x 3 in; no loose long cord

Tools and cutting allowance

Tape measure and steel rule; pencil and square; clamps; Saw suited to the stated wood stock; eye and hearing protection; Fine abrasive and a smooth sanding block; Drill/driver, scrap backing, drill bits and pilot bits matched to the stated joints; Scissors and small smooth paper clips for the tissue strips

Keep saw kerf outside every finished cut. Allow 1/8 in per saw pass in the stock purchase; measured blade kerf controls. Ordinary cut target is +/-1/16 in. Product-specific mounting holes are trial-fitted before drilling.

Step-by-step assembly

01 Inspect sound stock and a stable work surface. In the drawings x runs left to right, y front to rear and z upward.

02 Measure actual stock before cutting; nominal board names are not finished cross sections. Match each part to its label and material in the cut schedule.

03 Mark each finished cut separately, leaving saw kerf outside the line. Label parts, target +/-1/16 in and ease all hand-contact edges.

04 Lay out the upright on the base at x=4-5/8 to 5-3/8 in, y=2-1/4 to 3-3/4 in. The 16 in post stands on top of the 3/4 in base, making its upper end 16-3/4 in above the supporting table.

05 Drill a clearance hole through the base centered at x=5, y=3 in. Pilot the upright end for the actual #8 screw and install the 2-1/4 in screw from beneath, leaving 1-1/2 in engagement into the post. Keep the upright square while tightening.

06 Place the two 3 in foot blocks on either side of the upright, parallel to y, as shown. Fasten each from below with two 1-1/4 in screws through the base and into the 1-1/2 in block height. Their faces snug the upright to reduce sideways movement; do not force a bent post straight.

07 Place the 8 in crossbar across the upright front face, x=1 to 9 in, with its top flush with the upright at 16-3/4 in. The 1-1/2 in crossbar width is vertical and its 3/4 in thickness faces the operator.

08 Drill two crossbar pilots on the post centerline x=5 in, at heights 15-5/8 and 16-3/8 in. Drive two 1-1/4 in screws through the crossbar thickness into the upright; the remaining 1/2 in engagement must not break through the upright rear face.

09 Fit three small smooth removable clips at x=3, 5 and 7 in along the crossbar. Hold one 1/8 x 3 in tissue strip in each clip, with its lower end free. These are deliberately light replaceable flags; no burning incense, candle or chemical smoke is used.

10 Place the stand on a stable indoor table with its base clear of traffic. Move a sheet of paper gently nearby to verify all three flags move freely, then stop and allow the room air to settle before comparing a suspected window or door-edge draft.

11 Compare flag movement before and after moving the stand to a nearby reference position. Record which edge produces consistent movement; the flags do not measure airflow rate, certify ventilation or justify sealing a required vent. Remove the stand after the observation so it does not obstruct the opening.

12 Complete the listed acceptance checks before use. Record changes to stock or fittings; retain this sheet with the finished assembly.

Acceptance checks

Base 10 x 6 in (254 x 152.4 mm); crossbar top 16-3/4 in (425.45 mm) above the table.

Three tissue flags swing without touching each other, the post or the window.

All fastener points buried and base stable during an empty indoor hand check.

Use and maintenance

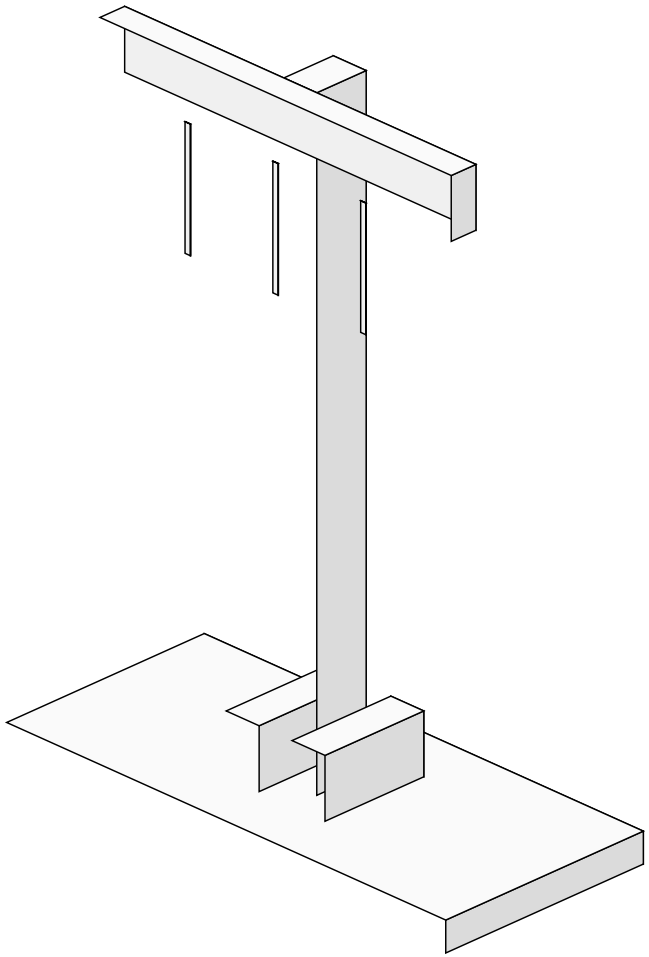
Keep dry, replace dirty or curled tissue flags and inspect the foot blocks and crossbar before each use.

Primary context

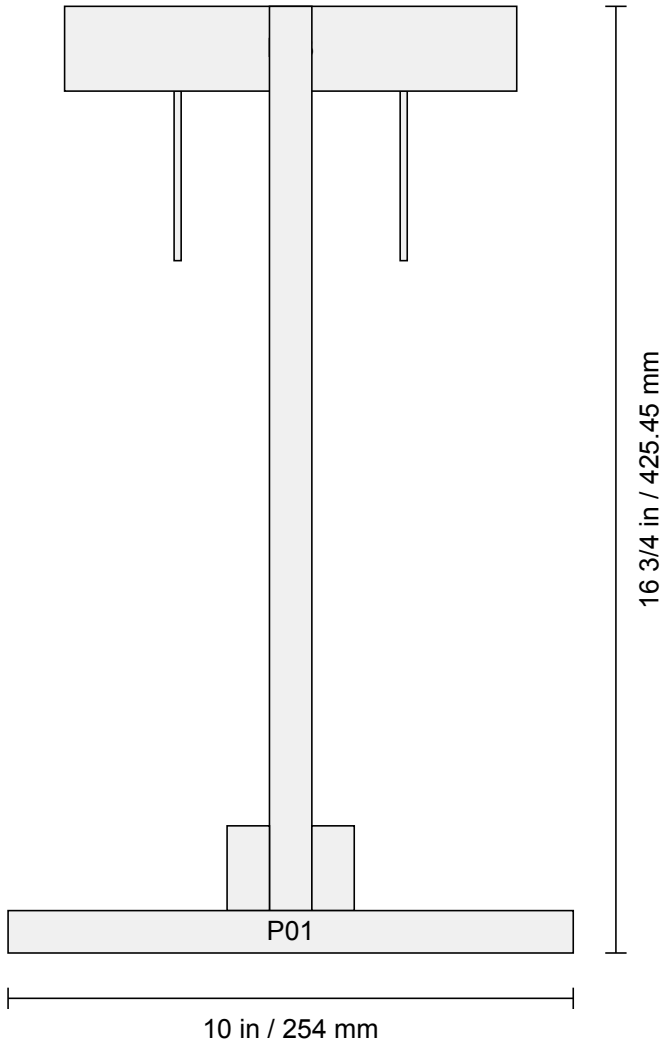
Natural Resources Canada: Keeping The Heat In, Section 8

CL-011 | Assembly and dimension reference

ISOMETRIC: assembly orientation



FRONT: projected part positions



Base 10 x 6 in (254 x 152.4 mm); crossbar top 16-3/4 in (425.45 mm) above the table. Three tissue flags swing without touching each other, the post or the window.

Use the written dimensions and construction sequence. Do not take dimensions from the drawing scale.