

# Balsa Truss Tester

**User Guide**



**PITSCO**  
EDUCATION

60006 V0212

## **Included Items**

- Balsa Truss Tester
- Square block
- Four-sided angle block

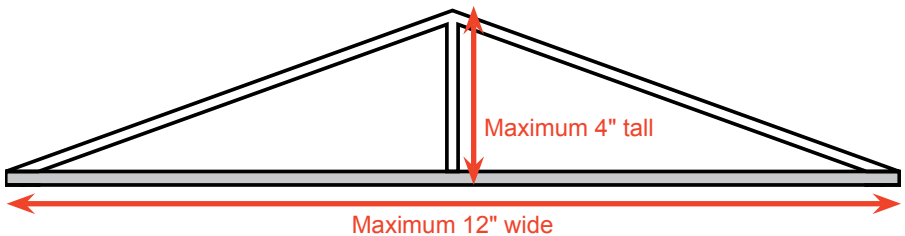
## **Items Required (not included)**

- Balsa wood truss(es) for testing\*
- Bucket tester (such as the Toothpick Bridge Tester) with sand/weights and books or blocks

### **OR**

- Structure Testing Instrument with the Balsa Truss Tester Adapter
- Safety glasses
- Books or blocks

\* Trusses for this tester must be made with 1/8" balsa wood and may not be more than 4 inches tall and 12 inches wide. Trusses with a flat top or with tops angled at 15°, 20°, 25°, or 30° will fit into the tester. Do not use trusses made of basswood or other materials.



**Caution:** When using the Balsa Truss Tester, be sure to wear safety glasses. Though the tester has an acrylic shield, it might not prevent all hazards if your truss breaks unexpectedly.

## **Safety**

- Anyone near the tester while it is in use should wear safety glasses.

## Using with Bucket Tester

1. Find two supports to rest either end of the Balsa Truss Tester on, such as two desks or tables pulled close together. Place the tester on these supports (Figure 1).



Figure 1



Figure 2

2. Attach the bucket to the hole on the end of the load block bar on the tester (Figure 2). Considering the height of the truss, try to keep the cord long enough so the bucket will be no more than an inch off the floor in case the truss breaks (you may have to place books or blocks under the bucket if the tables are very tall).
3. Place (additional) books or blocks under the bucket while adding or removing trusses (Figure 3).



Figure 3

4. Slide your truss into the side of the tester between the clear and black acrylic sides (Figure 4). Lift up the load block bar to slide the top of the truss under it. **Note:** If needed, the clear acrylic shield can be removed by unscrewing the six thumbscrews.

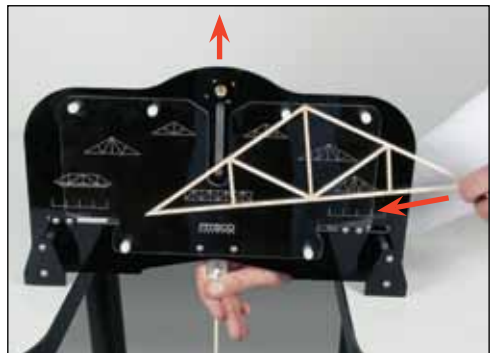


Figure 4

5. Make sure the ends of the truss rest on the span supports, overlapping the supports at least 1/2 inch on both sides (Figure 5). If needed, use the thumbscrews on the back of the tester to move the span supports where needed to support the truss (Figure 6). Retighten the thumbscrews.



Figure 5



Figure 6

6. For triangular trusses, select the proper angle on the angle block for the truss being tested (Figure 7). For flat trusses, unscrew the angle block from the tester and replace it with the square block (Figures 8-10).



Figure 7



Figure 8



Figure 9



Figure 10

7. Remove the book from under the bucket (Figure 11). Continue to use the bucket tester according to its directions, adding sand or weights to test the truss (Figure 12).



Figure 11



Figure 12

8. After testing the truss either to a certain weight or until it breaks, replace the book under the tester and remove the truss (Figure 13). Remove the sand/weights from the bucket.

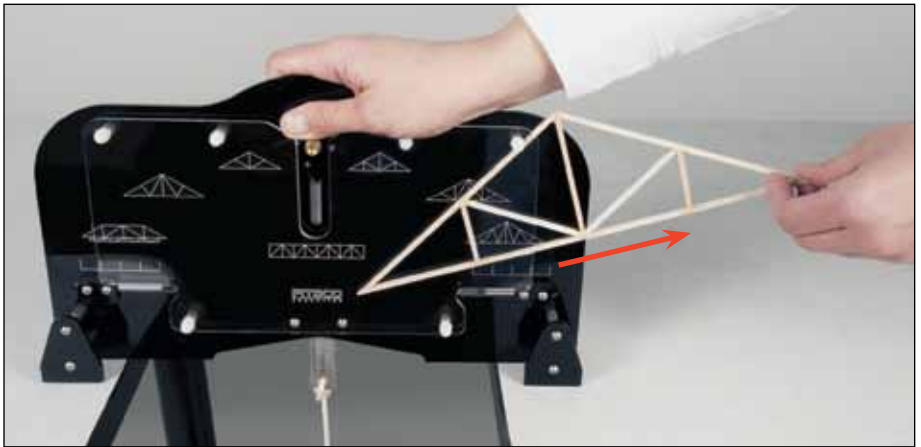


Figure 13

9. When finished testing a truss, remove it from the Balsa Truss Tester and put in the next truss. When finished testing all trusses, remove the bucket from the Balsa Truss Tester.

## Using with the Structure Testing Instrument

Be sure to prepare the Structure Testing Instrument (STI) for testing according to its user guide.

1. By turning the turn force wheel clockwise, raise the center post all the way up – when the wheel starts to resist, stop turning it (Figure 14).



Figure 14

2. Screw the Balsa Truss Tester Adapter onto the STI's center post until there's only about a half inch of threads showing between the adapter and the center post (Figures 15a and b).



Figure 15a



Figure 15b

3. Set up the STI, according to its user guide, to use the two span columns to support the Balsa Truss Tester (Figure 16).



Figure 16

4. Set the Balsa Truss Tester on the STI (Figure 17).



Figure 17

5. Lifting the load block bar up, slide your truss into the side of the tester between the clear and black acrylic sides (Figure 18).

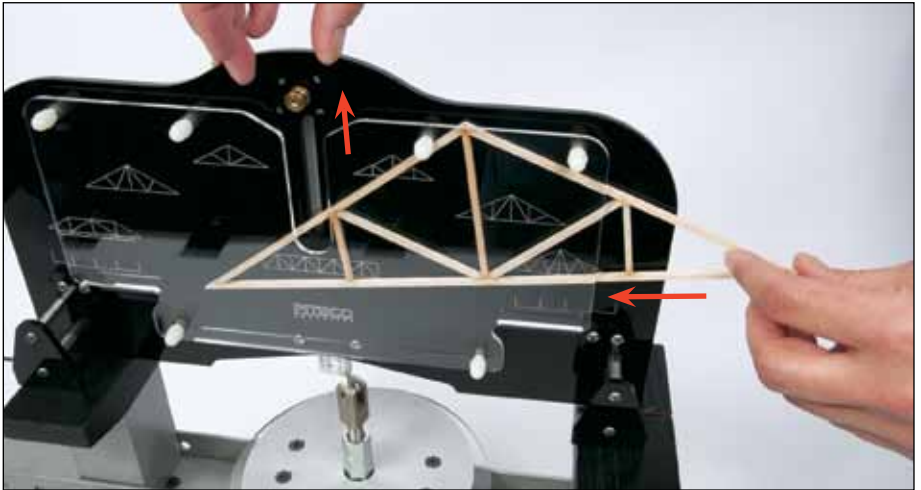


Figure 18

6. Make sure the ends of the truss rest on the span supports, overlapping the supports at least 1/2 inch on both sides (Figure 19). If needed, use the thumbscrews on the back of the tester to move the span supports where needed to support the truss (Figure 20). Retighten the thumbscrews.



Figure 19



Figure 20

7. For triangular trusses, select the proper angle on the angle block for the truss being tested (Figure 21). For flat trusses, unscrew the angle block from the tester and replace it with the square block (Figures 22-24).



Figure 21



Figure 22



Figure 23



Figure 24



8. If the hole of the load block bar does not align with the holes of the adapter, move the turn force wheel counterclockwise until they do (Figure 25).



Figure 25

9. Insert the metal pin to hold the tester and adapter together (Figure 26).
10. Use the STI according to its directions for testing a bridge (Figure 27 on the next page).



Figure 26



Figure 27

11. When finished testing a truss, remove it from the Balsa Truss Tester and put in the next truss (Figure 28).

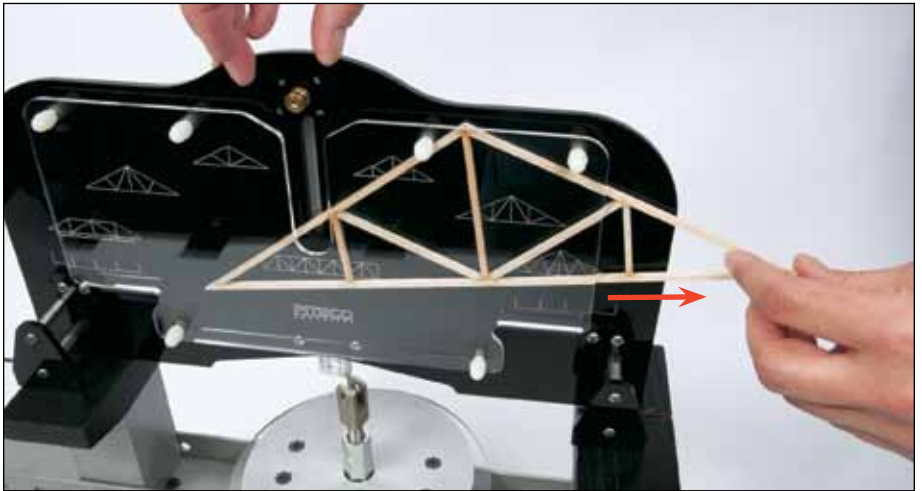


Figure 28

12. When finished testing all trusses, remove the Balsa Truss Tester and Balsa Truss Tester Adapter from the STI.

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