Cautionary and Warning Statements

• This kit is designed and intended for educational purposes only.
• Use only under the direct supervision of an adult who has read and understood the instructions provided in this user guide.
• Read warnings on packaging and in manual carefully.
• Safety glasses required.
• The maximum weight to add to the bucket is 100 lb.

Materials Included

For the Tester Stand

• Tester top
• 4 legs
• 4 corner brackets
• 2 upper braces (with Pitsco logo)
• 2 long lower braces
• 2 short lower braces
• 4 adjustable feet
• 32 Phillips-head bolts (M5 x 0.8 x 10)*
• 32 star washers*
• 32 nuts*
• 20 wood screws (#10 x 5/8)

*There might be extras of these parts.

For Bridge Testing

• 2 aluminum span blocks
• 4 hex bolts
• 4 washers
• 4 wing nuts

For Bridge and Tower Testing

• Bucket
• Wooden load block
• 2 deflection gauges (1.25" x 9" black rectangular plastic pieces)
• Load chain (3’)
• Large flat washer
• Eyebolt
• Large S hook
• Wing nut

Items Required (not included)

• Nut driver or wrench (5/16”)
• Phillips screwdriver
• Sand or other weighted material
• Drill
• Drill bit (1/8”)
• Pliers
Assembling the Legs and Braces

1. Loosely assemble the legs and braces for the tester table. To do this, locate the two corner brackets, one upper brace, one long lower brace, Phillips-head bolts, star washers, nuts, and two legs.

2. Using the Phillips-head bolts, nuts, and star washers (hand tighten only at this point), attach the long lower brace on the inside of the legs so the 90-degree angle of the brace faces down and away from the top of the legs (Figure 1).

3. Place one side of an upper brace to the outside of the legs (Figure 2).

4. Attach the corner brackets to the outside of the legs and to the front edge of the upper brace using fasteners listed in Step 1.

5. Repeat this procedure with the other legs, brackets, and braces.

Figure 1

Figure 2
6. Connect the two sets of leg assemblies with the short lower braces using the Phillips-head bolts, nuts, and washers (Figure 3). The bottom of the tester should now be loosely assembled.

**Attaching the Tester Top**

1. Place the tester top upside down either on the floor or on a table. Set the assembled legs and braces onto the tester top with the legs facing up (Figure 4).

2. Move the assembly around until it is evenly spaced on the surface. Mark the hole locations of the four holes in each corner bracket and the two holes in each upper brace. Remove the leg and brace assembly. Use a 1/8" drill bit in your drill to drill holes at each marked point to a depth of 1/2". Be careful not to drill all the way through the table top.

3. Secure the leg assembly to the tester top using the #10 x 5/8 wood screws through the upper brace and corner bracket holes that face the tester top.

4. Tighten all the nuts with the screwdriver and nut driver or wrench.

5. Take the adjustable feet and screw one into the end of each leg. Turn the tester stand over so it is resting on its legs. If the floor is not level, you can adjust the leg height by unscrewing the feet a little until the table is level.
Installing the Span Blocks

The aluminum span blocks can be placed in three different positions to test bridges with spans of 250 mm, 300 mm, and 350 mm. Before installing the blocks, decide which setting you need to use.

1. In each of the span blocks, insert the two hex bolts as shown (Figure 5).

2. Place the two span blocks on the tester top by inserting the bolts into the holes (Figure 6).

3. Place a washer and wing nut on each of the four bolts protruding through the bottom side of the tester top. Hand tighten the wing nuts so the blocks are anchored to the tester top.
Testing Bridges

1. Set the bridge on the aluminum span blocks.

2. Assemble the wooden load block, eyebolt, large flat washer, wing nut, and load chain as shown (Figure 7).

3. From the top side of the bridge, pass the load chain down through the opening in the center of the bridge roadbed (Figure 8). Set the load block on the roadbed.

4. Use the large S hook to hang the bucket from the chain. The bucket should be suspended at least 1" above the floor.

5. Place one of the deflection gauges across the hole in the tester top and under the bridge (Figure 9). During testing, when the bridge sags low enough to touch the deflection gauge, the bridge has reached 20 mm of deflection.

   If the bridge has a substructure, place one gauge on either side of the bridge, parallel to the bridge. During the test, sight across the top surface of the gauges. When any part of the bridge becomes aligned with the top of the gauges, it has deflected 20 mm.

6. Load the bucket with the specified weight using sand or other weighted material.
**Testing Towers**

1. Place the tower on the tester, centered over the hole in the top.

2. Assemble the wooden load block, eyebolt, large flat washer, wing nut, and load chain as shown (Figure 10).

3. Pass the chain down through the tower so it dangles beneath the tester top. Set the load block on the top surface of the tower.

4. Place the bucket under the tester stand (Figure 11). Use the large S hook to hang the bucket from the chain. The bucket should be suspended at least 1" above the floor.

5. Load the bucket with the specified weight using sand or other weighted material.