

## Diagrams

### Construction Site Test Rig

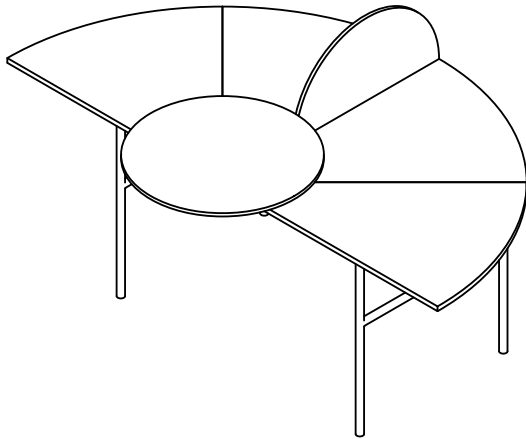


Figure 1: Isometric view of Construction Site Test Rig

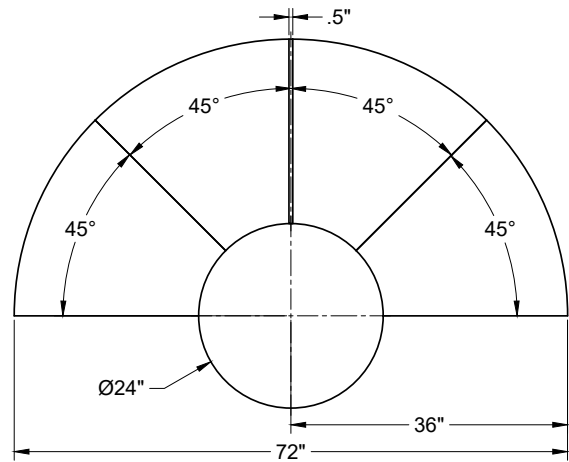


Figure 2: Aerial view of Test Rig

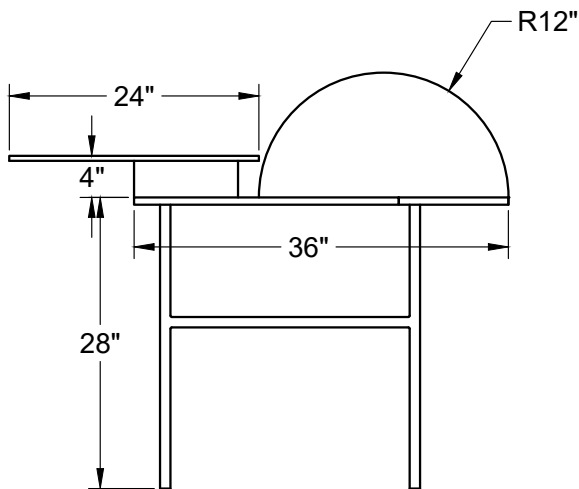


Figure 3: Side view of Test Rig

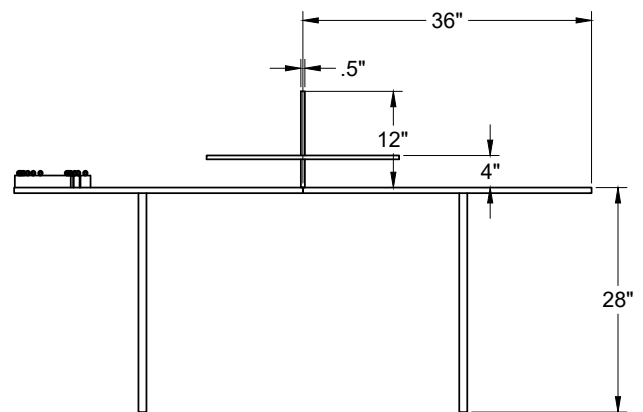
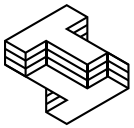


Figure 4: Alternate side view of test rig of Test Rig

**Note: There is an allowance of 1/4 inch measurement on all of these dimensions.**



## Housing Module

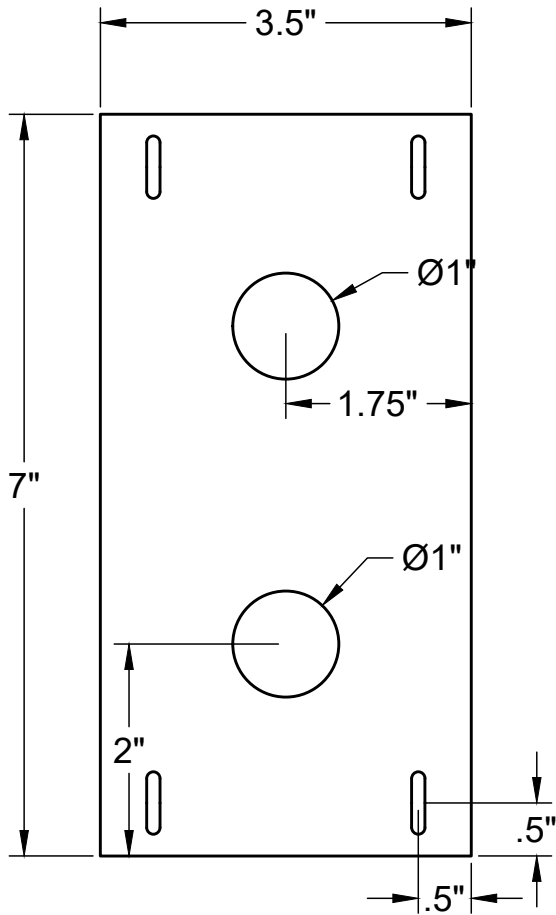


Figure 5: Aerial view of Housing Module

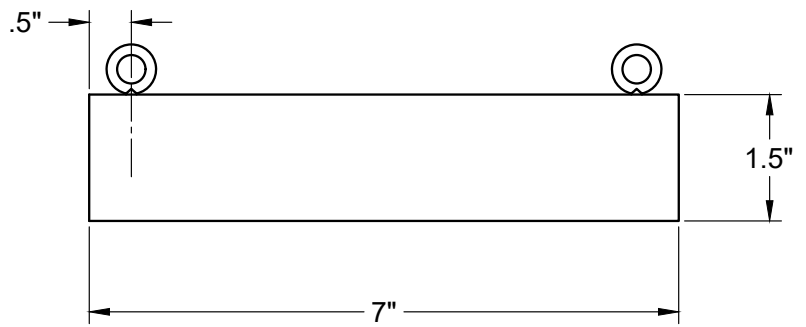


Figure 6: Side view of Housing Module

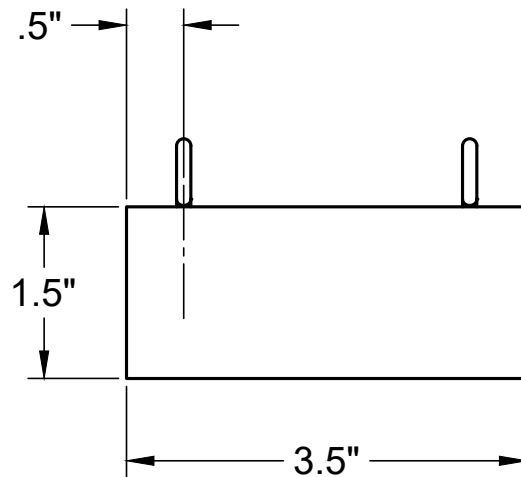


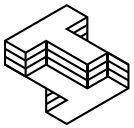
Figure 7: Alternate side view of Housing Module



### Screw Eyes

- #10 Everbilt Screw Eyes

Figure 8: Photo of Screw Eyes  
Holes for eye-screws are pre-drilled to prevent wood from splitting



## Targets

### Large Target Dimensions

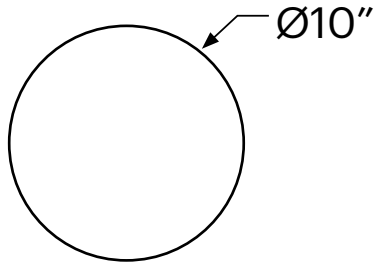


Figure 9: Measurements of Large Target

### Small Target Dimensions

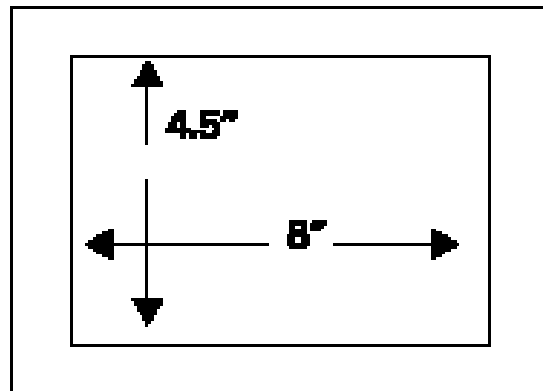


Figure 10: Measurements of Small Target

### Stack Target Dimensions

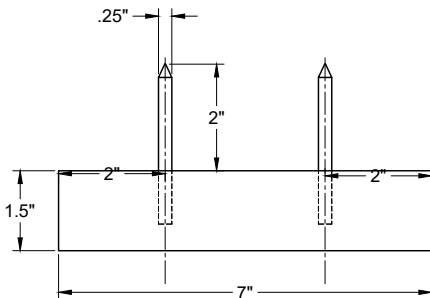


Figure 11: Side view of Stack Target

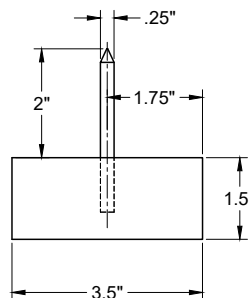


Figure 12: Side view of Stack target

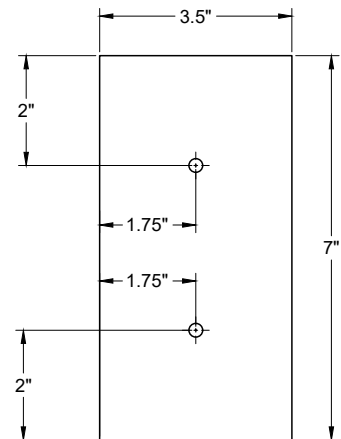
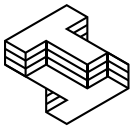
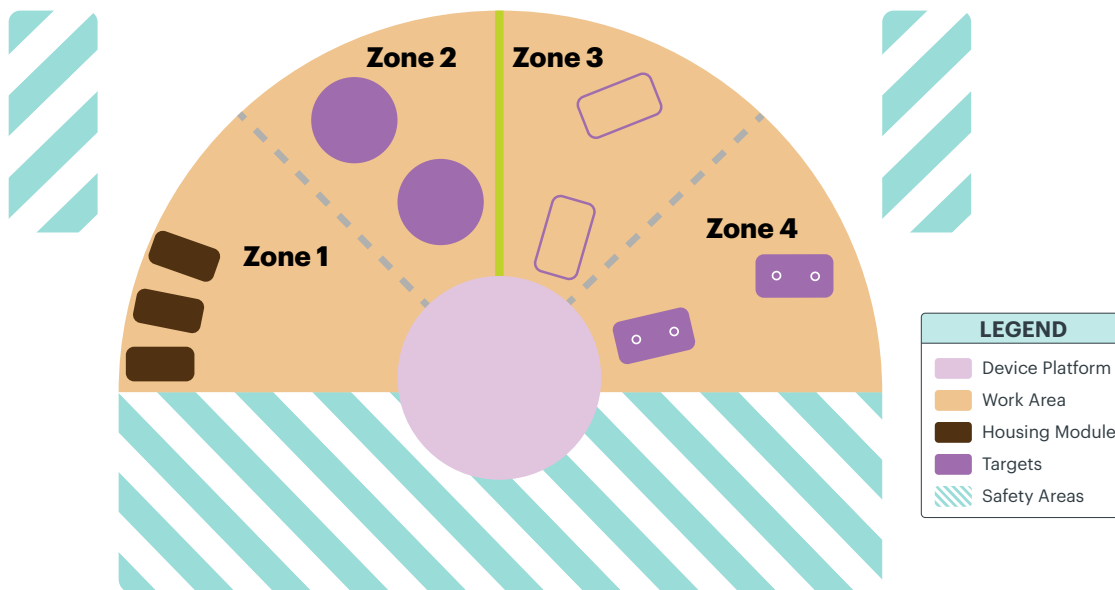


Figure 13: Aerial view of StackTarget



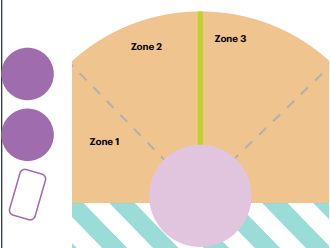
## Transfer Goals

- The three housing modules must begin in their designated start positions in Zone 1.
- Teams can place the three targets anywhere they like within the zones for their grade.
- The transfers can be completed in any order.
- **Once the transfers begin, targets may not be re-positioned.**



- Large targets should be placed in Zone 2
- Small targets should be placed in Zone 3
- Stack targets should be placed in Zone 4

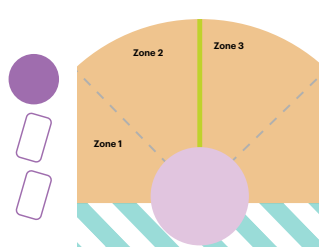
### Grades 4-5



Step 1: Place two large targets in Zone 2 and one small target in Zone 3.

Step 2: Move the three housing modules in Zone 1 onto the targets.

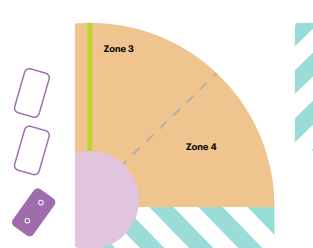
### Grades 6



Step 1: Place one large target in Zone 2 and two small target in Zone 3.

Step 2: Move the three housing modules in Zone 1 onto the targets.

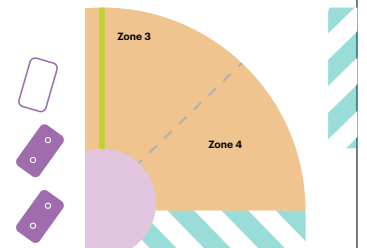
### Grades 7-8



Step 1: Place two small targets in Zone 3 and one stack target in Zone 4.

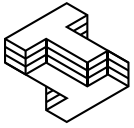
Step 2: Move the three housing modules in Zone 1 onto the targets.

### Grades 9-12

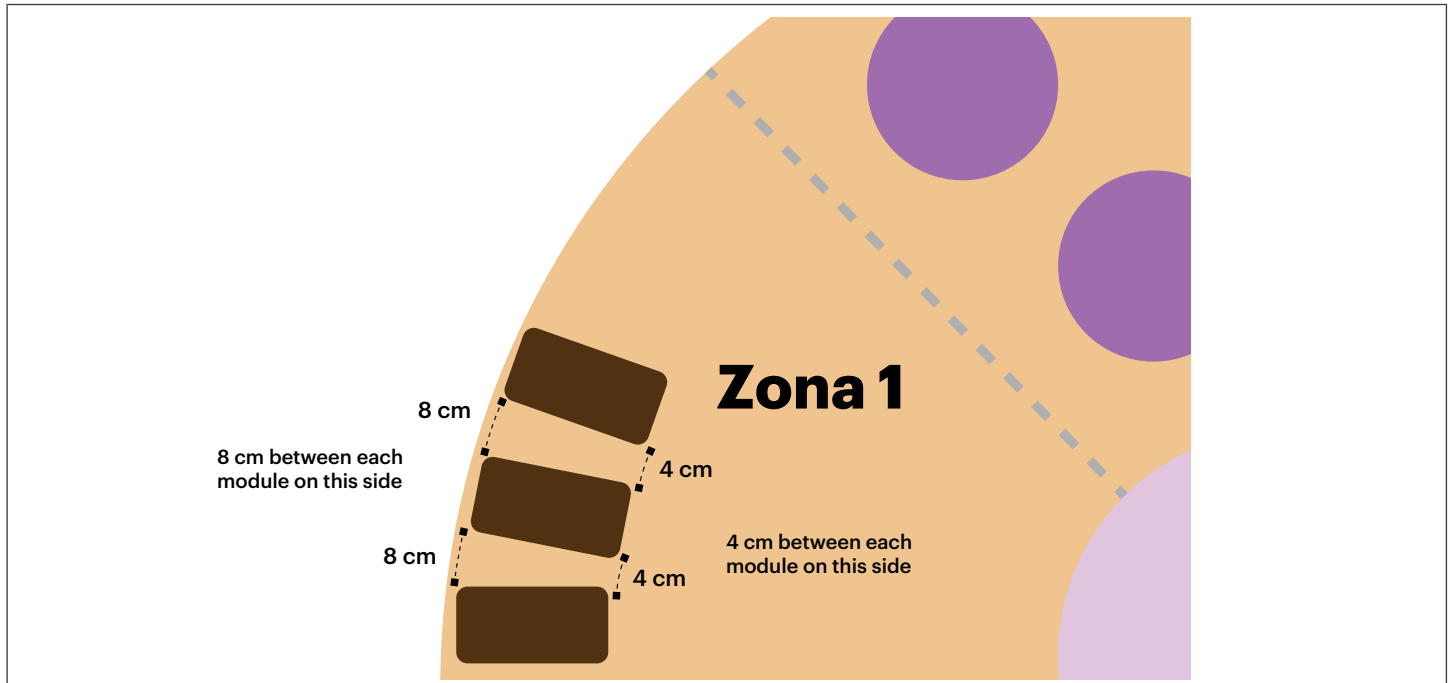


Step 1: Place one small target in Zone 3 and two stack targets in Zone 4.

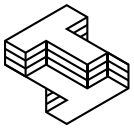
Step 2: Move the three housing modules in Zone 1 onto the targets.



## Starting position of the Housing Modules



- The first module is flush with the flat edge of the rig.
- The other modules are distributed radially from the module so that one end aligns with the curve of the rig and the other points to the center of the device platform.
  - Each module is 8 cm apart at the curve, and 4 cm apart on the end closer to the device platform.
- See the diagram above for the detailed placement.



## Tips for testing your device

### 1. Just try it!

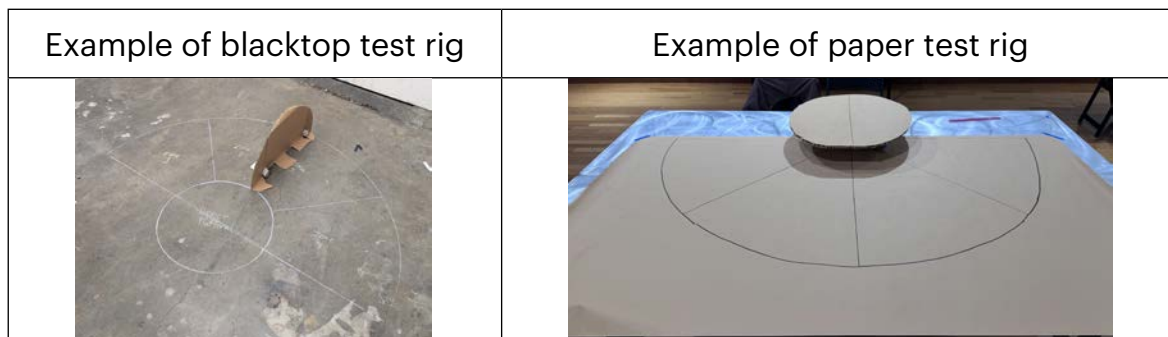
- Test parts of your device as you build.
  - *Do the connections work like you planned them to?*
  - *How much weight can your chosen material hold?*
- See how your device operates without building a full construction site test rig.
  - *Can your device lift a module?*
  - *Can it move a module to a target?*

### Remember

Every registered team gets one (1) wooden module for testing at home or at school! See [the website](#) for more details on how to pick up your module.

### 2. Mock-up a Test Rig

- When you need more detailed measurements to understand how your device works, create a test rig at home or at school.
- Starting with a simple outline of the test area can help you understand where you will place your device and how far it will need to lift the module.



### More tips and tricks



Interested in more detailed directions for creating accurate testing conditions with limited materials? [See our website](#) for some photos and videos of strategies we used when building the blacktop and paper test rigs.

### 3. Test with The Tech!

- When in doubt, come in-person! Test your device on our rigs in-person. Check the website for local [Test Trials events](#) and sign-up to test your device and get feedback from volunteers and professionals.



**Tip:** If you want support building your own home test rig sign up for one of our [Team and Adviser Challenge Kick-off Events](#).