Note:
1. If you are planning to disassemble frequently, you may want to consider using bolted connections instead of screws. It is helpful to consider ceiling height and ability to move assembly through doors before fastening sub-assemblies together.
2. Bolts spec’d as partially threaded can be replaced with fully threaded bolt of the same length.
3. TE-22190 can be replaced with TE-22190-AMActive (if pairing with AndyMark’s Motorized Agitator AM-4674) or TE-22190-AMPassive (if pairing with AndyMark’s Passive Agitator AM-4673).

Hardware Needed:
- #8 x 2” Long Screw - Qty 48
- #8 x 2.5” Long Screw - Qty 64

Optional, but recommended: Safety Edging such as pool noodles or baby proofing

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TE-22110</td>
<td>HUB - Complex Build - Base Assembly</td>
</tr>
<tr>
<td>2</td>
<td>TE-22120</td>
<td>HUB - Complex Build - Lower Ball Assembly</td>
</tr>
<tr>
<td>3</td>
<td>TE-22130</td>
<td>HUB - Complex Build - Fender Face Assembly</td>
</tr>
<tr>
<td>4</td>
<td>TE-22140-AM</td>
<td>HUB - Complex Build - Connection Box Assembly for AndyMark Upper Hub (AM-4671)</td>
</tr>
<tr>
<td>5</td>
<td>TE-22150</td>
<td>HUB - Complex Build - Lower Hub Ring Assembly</td>
</tr>
<tr>
<td>6</td>
<td>TE-22160</td>
<td>HUB - Complex Build - Upper Ball Assembly</td>
</tr>
<tr>
<td>7</td>
<td>TE-22170</td>
<td>HUB - Complex Build - Leg Assembly</td>
</tr>
<tr>
<td>8</td>
<td>TE-22180</td>
<td>HUB - Complex Build - Lower Hub Ring to Leg Assembly</td>
</tr>
<tr>
<td>9</td>
<td>AM-4671</td>
<td>AndyMark Production Upper Hub</td>
</tr>
<tr>
<td>10</td>
<td>washer_flat_.25</td>
<td>Flat Washer for 1/4&quot; Screw</td>
</tr>
<tr>
<td>11</td>
<td>nylock_.25_20</td>
<td>Steel Nylon-Insert Locknut, 1/4&quot;-20</td>
</tr>
<tr>
<td>12</td>
<td>hex_.25_20_2</td>
<td>Steel Hex Head Bolt 1/4&quot; x 2&quot; long, fully threaded</td>
</tr>
<tr>
<td>13</td>
<td>hex_.25_20_3.5 Partial</td>
<td>Steel Hex Head Bolt 1/4&quot; x 3.5&quot; partially threaded</td>
</tr>
<tr>
<td>14</td>
<td>hex_.25_20_5.5 Partial</td>
<td>Steel Hex Head Bolt 1/4&quot; x 5.5&quot; partially threaded</td>
</tr>
</tbody>
</table>
Note: On Field there is a protrusion in approximately this location. See GE-22300 for details. (4X)
1. Align 3 assemblies from Step 1 to 4, as shown.
2. Loosely connect using 2x 13, 4x 10, and 2x 11 per 7. Hardware will be tightened in a later step.

1. Align 1 to Step 2, as shown. Attachment will happen in a later step.
1. Add remaining Step 1 assembly to Step 3, as shown. Ensure the plywood from 1 sits on top of the 4"x4" lumber of 7.
   Note: Attachment between 7 and 1 will occur in a later step.
2. Connect 7 to 4 using 2x 13, 4x 10, and 2x 11. Ensure connection is tight.
3. Tighten hardware installed in Step 2.
1. Align 9 atop Step 4, as shown.
   
   Note: Ensure there are multiple people to lift 9 into place. Consider resting 9 atop 7, if needed. If an agitator such as AM-4673 or AM-4674 has been installed prior to this step, be mindful of any parts extending beyond the baseplate of 9. Installation of AM-4673 or AM-4674 can be done after 9 is connected to 4.

2. Connect 9 to 4 using 4x 12, 8x 10, and 4x 11.
1. Align 4x 6 to Step 5, as shown.
2. Connect using 2" long screws. It is recommended to use 8x screws per 6.
3. Optional: It is recommended to install safety edging on 6 at this time. Safety edging could be pool noodles, baby proofing material, etc.

1. Align 4x 5 atop 8 (installed in Step 1 assemblies), as shown.
2. Loosely connect 5 to 8 using 2x 14, 4x 10, and 2x 11 per 8.

If the parts are not touching, remove and try again. It is recommended to install safety edging on 6.
1. Align 4x 2 to Step 7, as shown. Connection will happen in a later step.

2. **Step 8**
   - Add 4x 3 to Step 8, as shown.
   - Connect 3 to 2 using 2.5" long screws. It is recommended to use 8x screws per 3, 4x per side.

3. **Step 9**
   - Tighten hardware between 4x (5) and 4x (8).

4. Optional: Add 2" long screws to connect 1 to 4x (7). It is recommended to 4x screws per 7.

Note: It is a best practice to avoid placing screws within 1" of the cut edge of 4"x4" lumber.
HUB - Complex Build - Fender and Lower Exit Vertical 2x4

UNLESS OTHERWISE SPECIFIED:
- SCALE: 1:2
- DIMENSIONS ARE IN INCHES
- TOLERANCES:
  - FRACTIONAL: $\frac{1}{16}$, $\frac{1}{16}$
  - TWO PLACE DECIMAL: $\frac{1}{16}$
  - THREE PLACE DECIMAL: $\frac{1}{16}$
- MATERIAL/FINISH:
  - 2" x 4" lumber
- PROPRIETARY AND CONFIDENTIAL:
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- COMMENTS:
  - REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

TEAM | NAME | DATE
--- | --- | ---
KAMC | KAMC | 12/16/2021

SIZE | DWG. NO. | REV
--- | --- | ---
C | TE-22101 | C

SCALE: 1:2 | SHEET 1 OF 1
**Hardware Needed:**

#8 x 2.5" Long Screw - Qty 32

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>TE-22111</td>
<td>Hub - Complex Build - Center Base Plate</td>
</tr>
<tr>
<td>2</td>
<td>TE-22112</td>
<td>HUB - Complex Build - Base Long 4x4</td>
</tr>
<tr>
<td>3</td>
<td>TE-22113</td>
<td>HUB - Complex Build - Base Short 4x4</td>
</tr>
<tr>
<td>4</td>
<td>TE-22114</td>
<td>HUB - Complex Build - Base to Leg Connection Plate</td>
</tr>
</tbody>
</table>

*DO NOT SCALE DRAWING*
Step 1
1. Align 2x 3 to 1 as shown. Attachment will happen in next step.

Step 2
1. Align 1 to Step 1, as shown.
2. Connect using 2.5" long screws. It is recommended to use 4x screws into each 3 and 8x 2.
   Note: A best practice when screwing into a 4"x4" is to avoid placing a screw within 1" from the cut edge.

Step 3
1. Align a total of 4x 4 such that x2 are on 2 and x1 is on each 3, as shown.
2. Connect using 2.5" long screws. It is recommended to use 4x screws per 4.
HUB - Complex Build
- Base Long 4x4

DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:
SCALE: 1:2
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: 1/16
ANGULAR: 1° BEND, 1/16
TWO PLACE DECIMAL: 0.13
THREE PLACE DECIMAL: 0.125
MATERIAL/FINISH:
4" x 4" Lumber

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EDGES.

UNLESS OTHERWISE SPECIFIED:

TEAM | NAME | DATE
--- | --- | ---
 | | 12/16/2021

DRAWN | KAMC
--- | ---

TOLERANCES:
FRACTIONAL: 1/16
ANGULAR: 1° BEND, 1/16
TWO PLACE DECIMAL: 0.13
THREE PLACE DECIMAL: 0.125
MATERIAL/FINISH:
4" x 4" Lumber

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COMMENTS:
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UNLESS OTHERWISE SPECIFIED:

TEAM | NAME | DATE
--- | --- | ---
 | | 12/16/2021

DRAWN | KAMC
--- | ---

TOLERANCES:
FRACTIONAL: 1/16
ANGULAR: 1° BEND, 1/16
TWO PLACE DECIMAL: 0.13
THREE PLACE DECIMAL: 0.125
MATERIAL/FINISH:
4" x 4" Lumber

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EDGES.

UNLESS OTHERWISE SPECIFIED:

TEAM | NAME | DATE
--- | --- | ---
 | | 12/16/2021

DRAWN | KAMC
--- | ---

TOLERANCES:
FRACTIONAL: 1/16
ANGULAR: 1° BEND, 1/16
TWO PLACE DECIMAL: 0.13
THREE PLACE DECIMAL: 0.125
MATERIAL/FINISH:
4" x 4" Lumber

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COMMENTS:
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EDGES.
**Hardware Needed:**

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
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<tbody>
<tr>
<td>1</td>
<td>TE-22101</td>
<td>HUB - Complex Build - Fender and Lower Exit Vertical 2x4</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>TE-22122</td>
<td>HUB - Complex Build - Lower Exit Bottom with Loop Assembly</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-22124</td>
<td>HUB - Complex Build - Lower Exit Removable Edge with Hook Assembly</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>TE-22125</td>
<td>HUB - Complex Build - Lower Exit Top</td>
<td>1</td>
</tr>
</tbody>
</table>

**Hardware Needed:**

#8 x 2" Long Screw - Qty 16
Step 1

1. Align 4x 1 onto 2 as shown.
2. Secure 1 to 2 by using 2" long screws through the bottom of 1 into 2. It is recommended to use 2x screws into each 1.

Step 2

1. Add 4 to Step 1 by aligning 1 to 4 in the same manner as aligning 1 to 2 from Step 1.
2. Secure 4 to 1 by using 2" long screws through the top of 4 into 1. It is recommended to use 2x screws into each 1.

Step 3

1. Attach 2x 3 to 2 using the pre-installed Hook and Loop, as shown.
Holes located at internal corners are provided predominately for teams making parts with a router. Corners with holes called out align with other parts or assemblies, and should not have internal fillets. A 90 degree angle is sufficient clearance.
Exploded View

Step 1
1. Attach 1 to 2 using adhesive backing. Align as shown on Sheet 2.
2. Optional: Use wood staples to connect 1 to 2.

Hardware Needed:
Optional: Wood Staples

<table>
<thead>
<tr>
<th>ITEM NO.</th>
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<th>DESCRIPTION</th>
<th>QTY.</th>
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<tbody>
<tr>
<td>1</td>
<td>Loop_1_12.5</td>
<td>1&quot; x 12.5' Loop, Adhesive Backed</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>TE-22121</td>
<td>HUB - Complex Build - Lower Exit</td>
<td>1</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ±1/16
ANGULAR: MACH: ±1°
BEND: ±1°
TWO PLACE DECIMAL: ±0.005
THREE PLACE DECIMAL: ±0.002

MATERIAL/FINISH:

DO NOT SCALE DRAWING

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

DRAWN: KAMC  12/20/2021
Step 1
1. Attach 1 to 2 as shown using adhesive backing.
2. Optional: Use wood staples to connect 1 to 2.

Hardware Needed: Optional: Wood Staples

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hook_1_12.5</td>
<td>1&quot; x 12.5&quot; Hook, Adhesive Backed</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>TE-22123</td>
<td>HUB - Complex Build - Lower Exit Removable Edge</td>
<td>1</td>
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</tbody>
</table>

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: ±1/16
ANGULAR: ±1° BEND ±1°
TWO PLACE DECIMAL: ±0.13
THREE PLACE DECIMAL: ±0.125

MATERIAL/FINISH:

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.
Note:
Holes located at internal corners are provided predominately for teams making parts with a router. Corners with holes called out align with other parts or assemblies, and should not have internal fillets. A 90 degree angle is sufficient clearance.
Hardware Needed:
- #8 x 2" Long Screw - Qty 23
- #8 x 2.5" Long Screw - Qty 12

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
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<tbody>
<tr>
<td>1</td>
<td>TE-22101</td>
<td>HUB - Complex Build - Fender and Lower Exit Vertical 2x4</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>TE-22131</td>
<td>HUB - Complex Build - Fender Front Face</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-22132</td>
<td>HUB - Complex Build - Fender Horizontal 2x4</td>
<td>3</td>
</tr>
</tbody>
</table>

Exploded View
Step 1

1. Align 2x 1 to the edges of 2, as shown.
2. Connect using 2" long screws. It is recommended to use 4x screws into each 1.

Step 2

1. Align 3x 3 between both 1, and position on 2 as shown. If needed, trim 3 to ensure fit.
2. Secure each 3 to 1 using 2.5" long screws. It is recommended to use 2x screws into each end of 3.
3. Secure 3 to 2 using 2" long screws. It is recommended to use 5x screws into each 3.
Note:
Use TE-22140 if NOT pairing with AndyMark Upper Hub (AM-4671).

Hardware Needed:

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<th>DESCRIPTION</th>
<th>QTY.</th>
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<tr>
<td>1</td>
<td>TE-22141-AM</td>
<td>Hub - Complex Build - Connection Box 2x4 for AndyMark Upper Hub (AM-4671)</td>
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<tr>
<td>2</td>
<td>TE-22142</td>
<td>Hub - Complex Build - Connection Box Top</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-22143</td>
<td>Hub - Complex Build - Connection Box Bottom</td>
<td>1</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: \( \frac{1}{16} \)
ANGULAR: MACH \( \frac{1}{16} \) BEND \( \frac{1}{8} \)
TWO PLACE DECIMAL: \( \frac{2}{13} \)
THREE PLACE DECIMAL: \( \frac{3}{125} \)

MATERIAL/Finish:

DO NOT SCALE DRAWING

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.
Step 1

1. Align 8x 1 on 3 as shown. Note hole location on 1.
2. Connect using 2" long screws. It is recommended to use 2x screws into each 1.

Step 2

1. Align 2 to Step 1 as shown.
2. Connect using 2" long screws. It is recommended to use 2x screws into each 1.
Note:
Use TE-22141 if NOT pairing with AndyMark Upper Hub (AM-4671)
Note: Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.
Note:
Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.
Step 1
1. Align 2x 4 to each other.

Step 2:
2. Connect Step 1 using the center 3 holes in 4. Use 1x 1, 2x 4, and 1x 2 per hole.
Note:
Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.

Holes marked with \(\text{A}\) are used to bolt together TE-22151 to TE-22151 in Assembly TE-22152. Match drilling at assembly level is acceptable.
Hardware:

#8 x 1.25" Long Screw - Qty 12

<table>
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<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>1</td>
<td>TE-22161</td>
<td>HUB - Complex Build - Upper Exit End</td>
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<tr>
<td>2</td>
<td>TE-22162</td>
<td>HUB - Complex Build - Upper Exit Base</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-22163</td>
<td>HUB - Complex Build - Upper Exit Connection Plate</td>
<td>1</td>
</tr>
</tbody>
</table>
Step 1

1. Align 3 and 1 as shown.
2. Connect parts using 1.25" Long screws. It is recommended to use 6x screws.

Step 2

1. Add 2 to Step 1, as shown.
2. Connect parts using 1.25" Long screws. It is recommended to use 6x screws.

Align Edges

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:
FRACTIONAL: 1/16

ANGULAR: MACH 1° BEND 1°

TWO PLACE DECIMAL: 0.13

THREE PLACE DECIMAL: 0.125

MATERIAL/FINISH:

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING
HUB - Complex Build - Upper Exit Base

DO NOT SCALE DRAWING

Removal of all burrs and sharp edges.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: \( \pm \frac{1}{16} \)
ANGULAR: Mach \( \pm \frac{1}{16} \) bend
TWO PLACE DECIMAL: \( \pm \frac{1}{32} \)
THREE PLACE DECIMAL: \( \pm \frac{1}{64} \)

MATERIAL/FINISH:
3/4" Plywood

SCALE: 1:4
SHEET 1 OF 1
Step 1:
1. Align 2 and 1, as shown.

Step 2:
1. Connect Step 1 using 2" long screws. It is recommended to use 5x screws on each side.

Hardware Needed:

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TE-22177</td>
<td>HUB - Complex Build - Lower Leg Assembly</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>TE-22178</td>
<td>HUB - Complex Build - Upper Leg Assembly</td>
<td>1</td>
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</tbody>
</table>

#8 x 2" Long Screw - Qty 10
Cut out is strongly recommended for ease of assembly.

Note:
Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.
Cut out is strongly recommended for ease of assembly.

Note:
Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.

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Material/Finish:
3/4" Plywood

Dimensions are in inches
Tolerances:
Fractional: ±1/16
Angular: Mach ±1° Bend ±1
Two place decimal: ±0.13
Three place decimal: ±0.125

Comments:
Remove all burrs and sharp edges.

DO NOT SCALE DRAWING
Hardware Needed:
#8 x 2' Long Screw - Qty 20

<table>
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</thead>
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<tr>
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<td>TE-22171</td>
<td>HUB - Complex Build - Lower Leg Vertical 4x4</td>
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<tr>
<td>2</td>
<td>TE-22172</td>
<td>HUB - Complex Build - Lower Leg Base 4x4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-22173</td>
<td>HUB - Complex Build - Lower Leg Base Side</td>
<td>2</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED:

MATERIAL/FINISH:

DO NOT SCALE DRAWING

COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.

DIMENSIONS ARE IN INCHES
TOLERANCES:
- FRACTIONAL: ±1/16
- ANGULAR MACH ±1° BEND ±1°
- TWO PLACE DECIMAL ±0.13
- THREE PLACE DECIMAL ±0.125

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Step 1

1. Align 2 and 3, as shown.
2. Connect using 2" long screws. It is recommended to use x5 screws.

Step 2

1. Add an additional 3 to Step 1, as shown.
2. Connect using 2" long screws. It is recommended to use x5 screws.

Step 3

1. Add 1 to Step 2 by sliding between both 3. Align as shown, such that 1 and 2 touch, and noting the orientation of the angle on 1.
2. Connect 1 to both 3 using 2" long screws. It is recommended to use x5 screws per 3.
Step 1

1. Align (3) on (1), as shown.
2. Connect using 2.5" long screws. It is recommended to use 5x screws.

Step 2

1. Add x1 (2) to each side of (1), as shown.
2. Connect using 2" long screws. It is recommended to use 5x screws per 2.
Hardware Needed:

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>TE-22181</td>
<td>HUB - Complex Build - Lower Hub Assembly</td>
</tr>
<tr>
<td>2</td>
<td>TE-22182</td>
<td>HUB - Complex Build - Lower Hub Ring to Leg Side</td>
</tr>
</tbody>
</table>

**UNLESS OTHERWISE SPECIFIED:**

- **DIMENSIONS ARE IN INCHES**
- **TOLERANCES:**
  - FRACTIONAL: ±1/16
  - ANGULAR: MACH 1° BEND ±1°
  - TWO PLACE DECIMAL: ±.013
  - THREE PLACE DECIMAL: ±.005

**MATERIAL/FINISH:**

- **DO NOT SCALE DRAWING**

**PROPRIETARY AND CONFIDENTIAL:**

- THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

**COMMENTS:**

- REMOVE ALL BURRS AND SHARP EDGES.
Step 1

1. Align 2x to 1, as shown.
2. Connect using 2" long screws. It is recommended to use 4x screws per 2.

Hidden Lines Shown

Align to Edge

Remove all burrs and sharp edges.
UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:
- FRACTIONAL: ±1/16
- ANGULAR: ±1°
- BEND: ±1°
- TWO PLACE DECIMAL: ±0.025
- THREE PLACE DECIMAL: ±0.002

MATERIAL/FINISH:
- 3/4" Plywood

DO NOT SCALE DRAWING

TITLE: HUB - Complex Build - Lower Hub Ring to Leg Side

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
- REMOVE ALL BURRS AND SHARP EDGES.

TEAM | NAME | DATE
--- | --- | ---
 | | 12/21/2021

DRAWN | REV
KAMC | C

SIZE | DWG. NO. | SHEET
2:3 | TE-22182 | 1 OF 1