**Notes:**
1. TE-23310, TE-23311, hex_.25_20_3.75_partial, washer_flat_.25, and nylock_.25_20 can be replaced if manufacturing your own field version hinges (GE-23328) or purchasing them from AndyMark (am-4940_2 or am-4940_4).
2. Driving surface of real CHARGE STATION is polycarbonate. To more accurately represent driving scenarios, a thin layer of polycarbonate can be attached to top surfaces.

### ITEM NO. PART NUMBER DESCRIPTION QTY.

<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>everbilt312x58Hinge_teamBridge</td>
<td>3-1/2 in. x 5/8 in. Radius Satin Nickel Door Hinge or equivalent</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>TE-23302</td>
<td>CHARGE STATION - Top Surface Panel</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>TE-23303</td>
<td>CHARGE STATION - Ramp Panel</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>TE-23304</td>
<td>CHARGE STATION - Ramp Slider Base Panel</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>TE-23305</td>
<td>CHARGE STATION - Hinge Tower Base</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>TE-23306</td>
<td>CHARGE STATION - Ramp Slider Spacer Panel</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>TE-23307</td>
<td>CHARGE STATION - Ramp Mount Spacer</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>TE-23308</td>
<td>CHARGE STATION - Ramp Tip Limiter</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>TE-23309</td>
<td>CHARGE STATION - Ramp Slide</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>TE-23310</td>
<td>CHARGE STATION - Double Hinge Strap</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>TE-23311</td>
<td>CHARGE STATION - Double Hinge Core</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>TE-23312</td>
<td>CHARGE STATION - Outer Support</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>TE-23313</td>
<td>CHARGE STATION - Double Hinge Mount</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>TE-23314</td>
<td>CHARGE STATION - Inner Brace</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>TE-23315</td>
<td>CHARGE STATION - Tip Limiter</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>TE-23316</td>
<td>CHARGE STATION - Double Hinge Auxiliary Support</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>TE-23317</td>
<td>CHARGE STATION - Hinge Tower Vertical</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>TE-23318</td>
<td>CHARGE STATION - Hinge Tower Top</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>TE-23319</td>
<td>CHARGE STATION - Ramp Mount</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>hex_.25_20_3.75_partial</td>
<td>Steel Hex Head Bolt, 1/4-20 x 3.75, partially threaded</td>
<td>4</td>
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<tr>
<td>21</td>
<td>nylock_.25_20</td>
<td>Steel Nylon-Insert Locknut, 1/4&quot;-20</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>loop_2x48</td>
<td>2&quot; x 48&quot; Loop, Adhesive Backed</td>
<td>2</td>
</tr>
<tr>
<td>23</td>
<td>washer_flat_.25</td>
<td>Flat Washer for 1/4&quot; Screw</td>
<td>16</td>
</tr>
</tbody>
</table>
Per Note 3, weight would be added along underside of bridge in approximately these locations.

Notes:
1. Dimensions shown are approximate and will vary depending on build quality. Dimensions shown are to allow comparison to real CHARGE STATION.
2. Field CHARGE STATION features a double hinge (GE-23328) with a pivot center to center of 5.3 in. For ease of manufacturing, TE-23311 features a center to center distance of 5.25 in. If delta is deemed important, TE-23311 should be manufactured with a 5.3 in. center distance, and mounting reference dimensions may vary slightly.
3. Pivoting assembly of field CHARGE STATION has a CAD-estimated weight of 209 lbs. To better emulate field behavior, weights can be added to achieve a more similar weight, center of mass, and moment of inertia. Weight of TE builds will vary heavily based on types of lumber used. CAD-model estimated version approximates 67.5 lbs of weight should be added per side if building only a half CHARGE STATION, or 30.5 lbs of weight per side if building a full CHARGE STATION. These estimates are with a CAD-estimated weight of the pivoting assembly of 74 lbs.
Align 12 flush to edge of 2.

All pieces aligned with face of 12 and pressed flush against it.

Step 1:
Attach 12 x2 and 13 to 2 as shown using #8 wood screws.

Step 2:
Attach 8 19 7 stack to 2 on both sides of subassembly as shown using #8 wood screws.
Step 3:
Attach (14) x2 and (16) x2 to the subassembly as shown using #8 wood screws.

Precise alignment of (14) not critical to function.
Step 4:

Attach 11 x2 and 15 x4 to assembly as shown using #8 wood screws.

When attaching 11, predrill holes to avoid splitting the lumber.

If using metal tubing for 11 instead of lumber, consider fastening with 1/4" lag bolts.

If using GE-23328, am-4940_2, or am-4940_4, replace each 11 with a double hinge block (with bushings already installed if press-fit). Attach with 1/4" lag bolts.

11 Should be centered on the width of 16, and edges should be aligned.
Step 5:
Build 2x assemblies of 5, 16, 17 x2, and 18 as shown. Fasten using #8 wood screws. Dimensions of part 5 are not critical to function. Alignment and spacing between 16 and 18 is important.

Step 6:
Attach 11 to 18 and 16 as shown using #8 wood screws. Predrill holes to avoid splitting 11. Repeat to have 2 assemblies like this.

If using GE-23328, am-4940_2, or am-4940_4, replace 11 with a double hinge block (with bushings already installed if press-fit). Attach with 1/4" lag bolts.

Align edge of 11 with edge of 16.

approximately centered on thickness of 14. Not critical to function.
Step 7:
Attach 1 x2 to 3 using #8 wood screws. Note orientation of 1 as shown in detail view.
Attach 22 to 3 in location shown. 22 should be on same face of 3 as 1. Narrower 22 can be used if needed. 22 must wrap over corner of 3.
Repeat Step 7 to have two subassemblies.

Step 8:
Attach 9, 2x 6, and 4 together as shown using #8 wood screws.
Repeat step 8 to have two subassemblies.
Step 9:
Attach 10\textsuperscript{x2} to each 11 on the assembly from step 4 using 20, 23, and 21 as shown.
Do not overtighten! 10 should freely rotate.
If using GE-23328, am-4940\_2, or am-4940\_4, replace 10 with hinge bars with bushings installed (bushings should face bushings of hinge block) and fasten using shoulder bolts.

Step 10:
Attach subassembly from step 6 to assembly from step 9 by connecting 11 and 10 using same hardware pattern as step 9.
Do not overtighten bolts!
Step 7 subassembly should be centered on width of step 10 subassembly. Small gaps on left and right end expected.

Step 11:
Attach 2x Step 7 Subassemblies to assembly from Step 10 as shown using wood screws. Connect by attaching 1 to 19.

Face of 3 should be planar with face of 2.
Step 12:
Carefully flip over assembly from previous step and place on floor.
Place subassemblies from step 8 on floor approximately in locations shown.
Subassemblies from step 8 may need to be taped down or held in place using hook fastener. Assembly should freely tilt back and forth and naturally return to level.
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:
1/2" Plywood

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING
Notes:
1. Per note in TE-23301, GE-23328 (field version CHARGE STATION) features a pivot hinge center to center distance of 5.3". For ease of team manufacturing, this design changes this value to 5.25". Part can be manufactured with a hole spacing of 5.3" if desired, ideally paired with some minor alignment tweaks on assembly.
Notes:
1. If metal square tubing is utilized, additional holes will need to be drilled during assembly to mount piece. These holes can be drilled during assembly based on chosen fasteners.
44.75 \text{ in} \quad 44 \text{ in} \quad 3 \text{ in}

1.50 \text{ in} \quad 1 \text{ in} \quad 1 \text{ in}

3.50 \text{ in} \quad 3 \text{ in} \quad 1 \text{ in}


double hinge mount

4 x 4 lumber

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL: \frac{1}{16}
ANGULAR MACH: \frac{1}{16} BEND
TWO PLACE DECIMAL: \frac{1}{10}
THREE PLACE DECIMAL: \frac{1}{100}

MATERIAL/FINISH:
2" x 4" lumber

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TITLE: CHARGE STATION - Double Hinge Mount

SIZE: 1:3
SCALE: 1:3
REV: C
C
TE-23313

TEAM NAME DATE
CO 12/20/2022

DRAWN

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