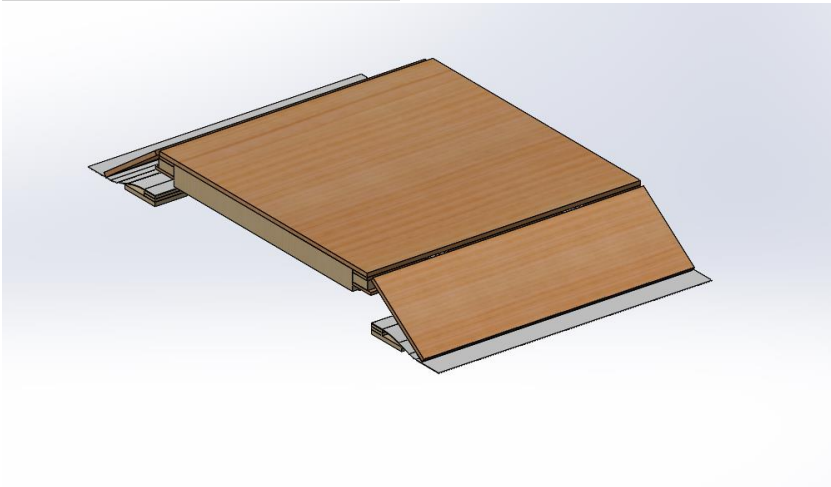


TE-23301 HALF CHARGE STATION



Description: This is a Half Charge Station, designed so that teams can practice driving and balancing on the Charge Station without having to build an entire Charge Station.

FILES INCLUDED

In this compressed folder, you will find all of the drawings, CAD Files and STEP Files for this design.

Drawings: For your convenience, all drawing files have been exported to PDF Format. Each major field assembly will have both assembly drawings and component drawings.

CAD Files: All SOLIDWORKS files required to build or modify the assembly.

STEP files: STEP files of the assembly are included for the convenience of non-SOLIDWORKS users.

Notes:

- Any reference to real field hinges is referring to GE-23328, which can also be purchased from AndyMark, part number am-4940_2 and am-4940_4.
- This design does not include polycarbonate - the driving surface on the field CHARGE STATION. If surface characteristics are important, teams should attach a thin layer of polycarbonate to the top of the drivable surface of the bridge.
- 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.

SHOPPING LIST

Plywood and Lumber (Example Cut List is at end of Readme):

- 2" x 4" x 8' Lumber – 4 Pieces
- 4' x 8' x 1/2" Thick Plywood – Less than 1/2 of a Sheet
- 4' x 8' x 3/4" Thick Plywood – 1 Sheet
- 1" Square Wooden Dowel (Hardwood preferred) – 2x 6" long and 4x 6 5/8" long pieces (these can be replaced with the real field hinges or 1" square metal tubes, see drawings for more details).

Hardware:

- ¼-20 hex head bolt 3.75" long – 4 Pieces
- ¼-20 lock nuts – 4 Pieces
- 1/4" Washers – 16 Pieces
- #8 Wood Screws x 1.5" long – Approximately 40 Pieces
- #8 Wood Screws x 3" long – Approximately 50 Pieces
- Everbilt 3-1/2" x 5/8" Hinges – 4 Pieces
- If using real field hinges or 1" square metal tubes in place of wooden dowels, 1/4-20 x 2" lag bolts – 8 Pieces

Other:

- 48" x 15.75" x .09" Fiberglass Reinforced Plastic (FRP) – 2 Pieces
- 2" x 47.5" pieces of loop side adhesive – 2 Pieces

Notes about materials:

- Plywood and Hardboard Sheets – quality of plywood is up to the user. Plywood of lower qualities may contain voids and may warp more than high quality plywood. All dimensions listed are "nominal". For example, ½" plywood is typically 15/32".
- Lumber - quality of lumber is up to the user. Please keep in mind that lumber of lower qualities may warp more than high quality lumber. All dimensions below are the "mill cut" dimensions. For example, 2" x 4" lumber is really 1½" x 3½".

Example Cut List (All units are Inches):

2x4 Lumber (does not include some angled cuts):

Repetition 1x	Stock length 96	Part length / Label		Qty	Waste	
		41.25 / TE-23312		1	Material remnant	0
		44.75 / TE-23313		1	Cut	0.5
		4.75 / TE-23315		2		
41.25 / TE-23312		44.75 / TE-23313		4.75 / TE-23315		

Repetition 1x	Stock length 96	Part length / Label		Qty	Waste	
		18.625 / TE-23314		2	Material remnant	0
		4.75 / TE-23315		1	Cut	0.562
		5.438 / TE-23316		1		
		48 / TE-23319		1		
18.625 / TE-23314		18.625 / TE-23314		4.75 / TE-23315		

Repetition 1x	Stock length 96	Part length / Label		Qty	Waste	
		41.25 / TE-23312		1	Material remnant	0.937
		5.438 / TE-23316		1	Cut	0.375
48 / TE-23319				1		
41.25 / TE-23312		5.438 / TE-23316		48 / TE-23319		

Repetition 1x	Stock length 96	Part length / Label		Qty	Waste	
		4.75 / TE-23315		1	Material remnant	53.497
		5.438 / TE-23316		2	Cut	1.125
		3.938 / TE-23317		4		
		5 / TE-23318		2		
4.75 / TE-23315		5.438 / TE-23316		3.938 / TE-23317		

3/4" Plywood:

Repetition	Stock dimensions	Panel	Qty
1x	96 x 48	48 x 48 / TE-23302	1
		7 x 48 / TE-23304	2
		14.25 x 47.5 / TE-23303	2
		7 x 48 / TE-23304	
		7 x 48 / TE-23304	
		4.875 x 48	

1/2" Plywood:

Repetition	Stock dimensions	Panel	Qty
1x	96 x 48	2.5 x 48 / TE-23006	4
		4.25 x 48 / TE-23008	2
		3.375 x 48 / TE-23007	2
		2.5 x 48 / TE-23006	
		2.5 x 48 / TE-23006	
		2.5 x 48 / TE-23006	
		2.5 x 48 / TE-23006	