

*** MAIN VERSION OF BOM ***

This is the main parts list for the 2013-2014 FTC game. The parts are listed in different categories (such as "Field Elements," "Hardware," "Wood," etc.). The item numbers assigned to the parts are the same item numbers that are used in the build guide. The values listed as "Item QTY" are the quantities needed for the different parts of this season's game.

Category	Item	Description	Center Balance Assembly	Flag Lift Assemblies	Corner Barrier Assemblies	Field	Total
			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Field Elements							
Field Element	F1	FTC Field Perimeter				1	1
Field Element	F2	5/8" Gray Soft Tiles				36	36
Field Element	F3	IR Beacon (Use 2 Masters)	2			0	2
Field Element	F4	Yellow 2" Game Cubes				100	100
Hardware							

Category	Item	Description	Center Balance Assembly	Flag Lift Assemblies	Corner Barrier Assemblies	Field	Total
			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Hardware	H1	1/2" x 10" Steel Threaded Pipe (1.27 cm x 25.4 cm)	2				2
Hardware	H2	1/2" x 60" Steel Threaded Pipe (1.27 cm x 152.4 cm)	1				1
Hardware	H3	1/2" Pipe Floor Flange The pipe flange serves as the cantilever base for the rounded steel pipe that supports the weight of a balance arm. If you are having problems sourcing the pipe flange and/or the steel pipe, then a replacement cantilever solution, which has a rounded bearing surface for the balance arm, should be able to support the weight of the balance arm and allow it to swing/pivot freely without binding. Critical dimensions for the placement of the cantilever arm are provided in the build guide.	2				2
Hardware	H4	10-32 x 3/4" Machine Screws	8				8
Hardware	H5	10-32 x 2" Machine Screws	22				22
Hardware	H6	10-32 Hex Drive Threaded Insert	30				30
Hardware	H7	1" ID Shaft Collars	6				6
Hardware	H8	1/4-20 x 4" Eye Bolt		4			4

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			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Hardware	H9	1/4-20 Hex Nut		6			6
Hardware	H10	#8 x 1.5" Wood Screws	22		12		34
Hardware	H11	#10 x 3" Wood Screws	16				16
Hardware	H12	6-9/16" Finish Corner Brace	2				2
Hardware	H13	13/64" Drill bit	1				1
Hardware	H14	1/4" Drill bit	1				1
Hardware	H15	9/32" Drill bit	1				1
Hardware	H16	3/8" Drill bit	1				1
Hardware	H17	1" Flat drill bit	1				1
Hardware	H18	1/4" x 1-1/4" Fender Washer	As Needed to Balance Arms				As Needed to Balance Arms
Hardware	H19	3/32" Drill bit	1				1
Hardware	H20	Metric 5mm Hex Key	1				1
Hardware	H21	#6 x 5/8" Wood Screws	16				16
Hardware	H22	#6 Flat Washer	16				16

Wood

Category	Item	Description	Center Balance Assembly	Flag Lift Assemblies	Corner Barrier Assemblies	Field	Total
			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Wood	W1	2x4 Lumber: Cut to 48" Length (121.9 cm) (note actual cross section is 1.5" x 3.5" or 3.81 cm x 8.89 cm)	3				3
Wood	W2	2x6 Lumber: Cut to 48" Length (121.9 cm) (note actual cross section is 1.5" x 5.5" or 3.81 cm x 13.97 cm)	2				2
Wood	W3	2x6 Lumber: Cut to 38" Length (96.52 cm) (note actual cross section is 1.5" x 5.5" or 3.81 cm x 13.97 cm)	2				2
Wood	W4	1x6 Lumber: Cut to 48" Length (121.9 cm) (note actual cross section is 0.75" x 5.5" or 1.91 cm x 13.97 cm)	2				2
Wood	W5	2x4 Lumber: Cut to 5.5" Length (13.97 cm) (note actual cross section is 1.5" x 3.5" or 3.81 cm x 8.89 cm)	4				4
Wood	W6	2x4 Lumber: Cut to 12" Length (30.48 cm) (note actual cross section is 1.5" x 3.5" or 3.81 cm x 8.89 cm)	4				4

Category	Item	Description	Center Balance Assembly	Flag Lift Assemblies	Corner Barrier Assemblies	Field	Total
			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Wood	W7	1/2 in. x 2 ft. x 4 ft. SandePLY Hardwood Plywood Handy Panel (actual dimensions are 0.472" x 23.875" x 47.875" or 1.2 cm x 60.64 cm x 121.60 cm)	2				2
Wood	W8	1/2 in. x 10" x 34" (1.2 cm x 25.4 cm x 86.36 cm) plywood panel.			2		2
Wood	W9	2x4 Lumber: Cut to 24" Length (60.96 cm) (note actual cross section is 1.5" x 3.5" or 3.81 cm x 8.89 cm)			4		4
Wood	W10	Wood Craft Door Hanger (For IR Beacon)	2				2
Wood		Note: If you are unable to obtain these pre-made hangers, you may use a small piece of 1/4" (0.64 cm) thick wood to make them. Directions are included in the build guide. Approximate size of wood is 3 1/2" x 9 1/2" x 1/4" (8.9 cm x 24.13 cm x 0.64 cm).					
Wood	W11	1/2 in. x 4.625" x 3.0" (1.27cm x 11.75cm x 7.62cm) plywood panel (cut from the extra wood used to make piece W8)	2				2
Wood	W12	1/2 in. x 2.5" x 3.0" (1.27cm x 6.35cm x 7.62cm) plywood panel (cut from the extra wood used to make piece W8)	2				2

Category	Item	Description	Center Balance Assembly	Flag Lift Assemblies	Corner Barrier Assemblies	Field	Total
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PVC Fittings and Pipe							
<p>A Note about PVC fittings pipe lengths - The lengths of the PVC pipes were designed for the existing FTC field perimeter designs (used in the 2012-2103 Ring It Up Season and earlier).</p> <p>For more recently designed fields, the actual cut lengths of the various PVC pipes might be slightly different than the values listed in this build guide. Changes might be needed to accommodate the slightly different geometry of any newly introduced field perimeter designs.</p>							
PVC	P1	1" x 1"x 1/2" Schedule 40 PVC Slip x Slip x Slip Reducing Tee		2			2
PVC	P2	1/2" PVC Schedule 40 Fitting: 90° Elbow (Slip x Slip)		4			4
PVC	P3	1/2" PVC Schedule 40 Fitting: T-Joint (Slip x Slip x Slip)		2			2
PVC	P4	3/4" PVC Schedule 40 Fitting: Cross Joint (Slip x Slip x Slip x Slip)		2			2
PVC	P5	3/4" PVC Schedule 40 Fitting: T-Joint (Slip x Slip x Slip)		2			2
PVC	P6	3/4" PVC Schedule 40 Fitting: 3 Way Joint (Side Outlet Elbow, Slip x Slip x Slip)		2			2
PVC	P7	1/2" PVC Schedule 40 Fitting: Coupling (Slip x Slip)		4			4
PVC	P8	1/2" PVC Schedule 40 Fitting: End Cap (Slip)		2			2
PVC	P9	1/2" PVC Schedule 40 Pipe: 8" (20.32 cm)		2			2
PVC	P10	1/2" PVC Schedule 40 Pipe: 1.5" (3.81 cm)		4			4
PVC	P11	1/2" PVC Schedule 40 Pipe: 3" (7.62 cm)		2			2
PVC	P12	1/2" PVC Schedule 40 Pipe: 4.25" (10.8 cm)		2			2
PVC	P13	1/2" PVC Schedule 40 Pipe: 11.75" (29.85 cm)		2			2
PVC	P14	3/4" PVC Schedule 40 Pipe: 10" (25.4 cm)		4			4
PVC	P15	3/4" PVC Schedule 40 Pipe: 9.5" (24.13 cm)		2			2
PVC	P16	3/4" PVC Schedule 40 Pipe: 1.75" (4.45 cm)		2			2
PVC	P17	3/4" PVC Schedule 40 Pipe: 72" (182.88 cm)		2			2
PVC	P18	3/4" PVC Schedule 40 Pipe: 1.625" (4.13 cm)		2			2

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			Item QTY	Item QTY	Item QTY	Item QTY	Item QTY
Tape							
Tape	T1	1" White Gaffer's Tape (2.54 cm wide)	As Needed			As Needed	As Needed
Tape	T2	2" Red Gaffer's Tape (5.08 cm wide)	As Needed			As Needed	As Needed
Tape	T3	2" Electric Blue Gaffer's Tape (5.08 cm wide)	As Needed			As Needed	As Needed
Miscellaneous							
Misc	M1	PVC Cement	As Needed				As Needed
Misc	M2	Black Paint	As Needed				As Needed
Misc	M3	Red Paint	As Needed				As Needed
Misc	M4	Blue Paint	1 quart				1 quart
Misc	M5	White Paint			1 quart		1 quart
Misc	M6	Primer and Sealer	As Needed	As Needed	Assemblies		1 gallon

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Misc	M7	<p>Sterilite 1695 Mini Crate (dimensions 9" L x 7 7/8" W x 6 1/8" H or 22.9cm L x 20.0cm W x 15.6cm H).</p> <p>NOTE: If you are unable to source the Sterilite 1695 Mini Crate locally, and you need to find or build a suitable replacement, it is important that the overall length of the container be equal to or slightly less than the length of the Sterilite container (9" or 22.9 cm). The other dimensions should be very close to the 1695's dimensions, but it is critical that the length is the same or slightly smaller size.</p> <p>Also note that ideally the container should be translucent so the teams and referees can see how many blocks are in a box. However, if the translucent color of the Sterilite MiniCrate is unavailable, an alternate color (such as red in blue, or a neutral color like black or yellow) could be substituted.</p>	8				8
Misc	M8	White 8 1/2" x 11" (21.59 cm x 27.94 cm) Card Stock		2			2
Misc	M9	White Poster Board (enough for two 8 1/2" x 11" or 21.59 cm x 27.94 cm pieces)		As Needed			As Needed
Misc	M10	Tape Measure	As Needed				As Needed
Misc	M11	8" Cable Ties				As Needed	As Needed
Misc	M12	9V Alkaline Batteries	See Note				See Note
Misc	M13	Tape Measure				1	1

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Misc	M14	1/4" Staples (T50 Style)	As Needed				As Needed
Misc	M15	Sharpie (Magnum)		1			1
Misc	M16	Vinyl letters to indicate location of IR beacon.	As Needed				
Misc	M17	8.5" x 11" (21.59 cm x 27.94 cm) Sticky Back Paper.		2	2		4
Misc	M18	Four sided Die (optional).				1	1
Misc	M19	Synthetic Twine		At least 23' or 7 m			At least 23' or 7 m
Misc	M20	Sticky Back Velcro (2" or 5.08cm width)	Around 80" (or 2.03m)				Around 80" (or 2.03m)
Optional PVC Cleaning Supplies							
PVC Cleaning	CL1	3M Medium-Grit Sanding Sponge		As Needed			As Needed
PVC Cleaning	CL2	3M Fine-Grit Sanding Sponge		As Needed			As Needed