

## 2013 BEST Consumable Kit List (provided by hub)

Type	Check	Qty	Item Description
Iigus® Donated Parts		1 meter	EZ Energy Chain System®, P/N 05-4-038-0, with 2 mounting brackets (P/N 050-20-12)
		2 ea	DryLin® N Low Profile Linear Guide system, P/N NK01-27-2-450
		6 ea	igubal® Flange Mount Spherical Bearing, 1/4", P/N EFOI-04
		6 ea	igubal® Pillow Block Mount Spherical Bearing, 1/4", P/N KSTI-04
		6 ea	igubal® 1/4" Rod End Bearing, 1/4"-28 Thread, P/N EBRI-04
		2 ea	DryLin® S, 1/4" diameter, hard anodized Aluminum Shaft, P/N AWI-04, 18 inch length
Plastic and Metal Stock		1 ea	1/4" thick polypropylene sheet 12" X 24"
		1 ea	1/8" thick PVC Type 1 sheet 12" X 24"
		1 ea	0.5" thick X 2" wide 6061-T6 aluminum flat, 12" long
		1 ea	0.063" thick 5052-H32 aluminum sheet, 12" x 24"
		1 ea	0.5" diameter 6061-T6 aluminum round, 24" long
		2 ea	0.25" diameter AISI 1018 steel round, 24" long
		3 ea	piano wire, 0.063" diameter, 2' long
Wood Stock		1 ea	15/32" or 1/2" thick, BC grade, 2'X4' plywood
		1 ea	11/32" or 3/8" thick, 2'X4' plywood, BC or Luan grade
		1 ea	5 mm thick Luan grade, or 7/32" or 1/4" thick BC grade, 2'X4' plywood
		2 ea	1" X 4" #2 whitewood, 2 ft long
		1 ea	1/4" X 48" hardwood dowel
PVC Pipes and Fittings		4 ea	1/2" schedule 40 PVC pipe, 5 ft long
		2 ea	3/4" schedule 40 PVC pipe, 5 ft long
		2 ea	1" schedule 40 PVC pipe, 5 ft long
		1 ea	4" PVC solid sewer pipe, SDR 35 or ASTM D2729, 3 ft long (without integral coupling)
		10 ea	1/2" PVC 90 degree elbow (slip)
		10 ea	1/2" PVC tee (slip)
		10 ea	3/4" PVC 90 degree elbow (slip)
		10 ea	3/4" PVC tee (slip)
		6 ea	1" PVC 90 degree elbow (slip)
		6 ea	1" PVC tee (slip)
		1 ea	regular PVC cement, 4 oz
	Hardware		4 ea
		4 ea	2" X 3/8" steel ZN, flat angle bracket
		2 ea	2.5"H X 1.75"W X 0.055" narrow hinge w/removable pin
		2 ea	1.5"H X 1-3/8"W X 0.05" narrow hinge w/nonremovable pin & 4 screws
		1 ea	extension spring for heavy doors, 13/32"OD, 0.0625" wire diameter, steel
		1 ea	6" x 6" steel turntable, 500 lb capacity
		1 ea	3/4" metal pipe hanger tape, 28 gauge, 10 ft long
Electrical		12 ft	18 gauge stranded copper wire, red insulation, single conductor
		12 ft	18 gauge stranded copper wire, black insulation, single conductor
		12 ft	CAT3 24 gauge, 4 twisted pairs of conductor wire
		16 ea	snap-plug terminals (bullet connectors), insulated, male
		16 ea	snap-plug terminals (socket for bullet connectors), insulated, female
		20 ea	quick-disconnect terminal, insulated, female, 0.11" wide (hub optional *)
		10 ea	quick-disconnect terminal, insulated, female, 0.187" wide (hub optional *)
		4 ea	sub-mini snap action switch, SPDT, 0.1 A, Omron P/N SS-01GL13PT
		2 ea	rotary potentiometer, linear, 10K ohm, 300°, panel mount, 6mm (approx.) shaft
		2 ft	heat shrink tubing, 1/4" OD expanded, 2:1 ratio, polyolefin, black
		10 ea	11" long x 0.18" wide nylon cable tie
		20 ea	4" long x 0.1" wide nylon cable tie
Tapes and Adhesives		1 ea	vinyl electrical tape, 3/4" wide, 60 ft
		1 ea	friction tape, 3/4" wide, 60 ft
		1 ea	all purpose duct tape, 2" (or 1.88") wide, 50 to 60 yd, (color optional)
		1 ea	painters tape, 1" (or 0.94") wide, 30 to 60 yd.
		1 ea	carpenters wood glue, 4 oz
		1 ea	5 minute epoxy, 0.85 oz

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Type	Check	Qty	Item Description
<b>Threaded Fasteners</b>		1 ea	1/4"-20 threaded rod, 3' long, steel
		25 ea	1/4"-20 hex nut, steel
		25 ea	1/4" SAE flat washer, steel
		25 ea	1/4" medium split lock washer, steel
		6 ea	1/4-28 x 1" screw, nylon (mates with igus rod end)
		6 ea	#10-32 x 3/4" hex head, Grade 8 steel screws
		25 ea	#10-32 X 1 1/2" machine screws, steel, round head, phillips
		25 ea	#10-32 machine screw nuts, steel
		25 ea	#10 flat washer, steel
		100 ea	#8-32 X 1 1/4" machine screw, steel, pan head, phillips
		100 ea	#8-32 machine screw nuts, steel
		25 ea	#8 medium split lock washer, steel
		25 ea	#4-40 X 1" machine screws, round head, steel
		25 ea	#4-40 machine screw nuts, steel
		10 ea	#2-56 X1" machine screws, pan head, phillips, stainless
		10 ea	#2-56 machine screw nuts, 3/16x1/16, steel
		10 ea	#2 flat washer, steel
		10 ea	wood screw eyebolts, 0.192 wire dia x .97 shank x .75 thread x .27 id, steel
		100 ea	#8 X 1" sheet metal screw, steel, hex head
		100 ea	#6 X 1" wood screws, steel, flat head
	25 ea	#4 X 3/4" wood screw, steel, slotted drive, round head	
<b>Miscellaneous</b>		5 ft	3/4" nylon sticky back hook and loop fastener
		1 ea	#18 twisted nylon seine twine, 225 to 250 ft long (color optional)
		4 ft	1/4" polypropylene covered shock cord (color optional)
		2 ft	3/8" thick, 1" wide, adhesive backed, gum rubber strip
		1 ea	bicycle inner tube (26" X 1.5" to 2.00")
		1 ea	60x65" universal brake cable with housing (white or black)
		25 ea	#10 Rubber Band (1/16" wide x 1-1/4" long)
		25 ea	#32 Rubber Band (1/8" wide x 3" long)
		100 ea	1 1/4" long paper clips, 0.033 dia wire (No. 1 Regular)
		1 ea	VEX motor mounting kit ( 4 mounts + screws)

### Approved Optional Items (provided by team) \*\*

Qty	Item Description
10 ea	wooden spring type clothes pins
2400 sq in	corrugated cardboard, 1/4" maximum thickness
2 ea	empty aluminum soft drink cans (12 fl. oz.)
1 ea	empty food/beverage PETE container with screw on cap/lid (2 liter max.) ***
3 ea	wire coat hangers with or without plastic coating, 1/8" dia. max.
3 ea	solid core golf balls
1 ea	5 minute epoxy, 0.85 oz
3 ea	~10oz empty metal soup can with lid removed
24 lb	pennies (cannot be altered)
1 ea	4 oz. PVC primer
144 sq in	heavy duty aluminum foil
6 ea	wooden golf tees
1 ea	aluminum paint grid for 5 gallon bucket
1 ea	inner tube repair kit
4 ea	compact disk (standard size: 120mm diameter x 1.2 mm thick)

Notes: \* The supply of Hub Optional items is determined by the hub. Teams may not add these.

\*\* The identified Team Supplied (Optional Items) can be used *in addition* to the items that are supplied by the hub.

\*\*\* PET or PETE (polyethylene terephthalate) is identified by a number 1 recycling symbol. Typical examples of PET containers are soft drink bottles or a container for peanuts.