

2021 BEST Consumable Kit List (provided by hub)

Type	Check	Qty	Item Description
igus® Donated Parts		1 meter	Energy Chain, P/N E2-15-20-028-0, w/ 2 each mount brackets (P/N E2.150.20.1 & .2)
		2 ea	DryLin® N 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	iglide® G300 Flanged Bushing, 1/4", P/N GFI-0405-06
		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 12"
		2 ea	0.25" diameter AISI 1018 steel round, 24" long
		4 ea	piano wire, 0.063" diameter, 12" long
Wood Stock		1 ea	5/16" to 3/8" thick 2' x 4' plywood, any grade
		1 ea	3/16" to 1/4" thick 2' x 4' plywood, any grade
		2 ea	1" x 4" (nominal) #2 whitewood, 2 ft long
		1 ea	1/4" dia. oak dowel, 3 ft long
Pipes and Fittings		2 ea	3/4" schedule 40 PVC pipe, 5 ft long
		1 ea	1" schedule 40 PVC pipe, 5 ft long
		10 ea	3/4" PVC 90 degree elbow (slip)
		10 ea	3/4" PVC tee (slip)
		1 ea	PVC cement, 4 oz or 8 oz
Hardware		4 ea	2.5" x 5/8" steel ZN, corner angle bracket
		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	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 (optional*)
		16 ea	snap-plug terminals (socket for bullet connectors), insulated, female (optional*)
		20 ea	quick-disconnect terminal, insulated, female, ~1/8" wide (optional*)
		10 ea	quick-disconnect terminal, insulated, female, ~3/16" wide (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
		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
Threaded Fasteners		1 ea	1/4"-20 threaded rod, 3 ft 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 1" socket head screw, high strength (150 KSI min) steel**
		25 ea	#10-32 x 1-1/2" machine screws, steel, round/pan 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, round/pan head, phillips **
		100 ea	#8-32 machine screw nuts, steel
		25 ea	#8 medium split lock washer, steel (optional*)
		100 ea	#8 flat washer, steel
		25 ea	#4-40 x 1" machine screws, round/pan head, steel **
		25 ea	#4-40 machine screw nuts, steel
		10 ea	#2-56 x 1" machine screws, round/pan head, phillips, stainless **
		10 ea	#2-56 machine screw nuts, steel
		10 ea	#2 flat washer, 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
Miscellaneous		5 ft	3/4" nylon sticky back hook and loop fastener
		1 ea	#18 twisted nylon or polypropylene seine twine, 225 to 250 ft long (color optional)
		4 ft	1/4" polypropylene covered shock cord (color optional)
		1 ea	bicycle inner tube (26" x 1.375" min to 2.25" max)
		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) ¹

Qty	Item Description
10 ea	wooden spring type clothes pins
2400 sq in	corrugated cardboard, 1/4" maximum thickness
2 ea	empty food/beverage PETE container with screw on cap/lid (2 liter max.) ²
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; bank wrappers allowed)
1 ea	8 oz. PVC primer
36 ea	craft "Popsicle" sticks (maximum dimensions; 4.75" long, 0.44" wide, 0.10" thick)
1 ea	metal paint grid for 5 gallon bucket
4 ea	CD or DVD disk (standard size: 120mm diameter x 1.2 mm thick)
25 ea	deck or drywall screws; 2-1/2" maximum length
25 ea	wire management clips/ties/wraps (can only be used on wiring)
1	3/4" or 1" rigid foam board insulation, 1' x 4'
2 ea	Team Custom Part ³

Notes: * Teams may use these optional items even if they are not supplied by the hub.

** Teams may substitute shorter screws of the same type and grade.

1 These items can be used *in addition* to the items that are supplied by the hub.

2 PET or PETE (polyethylene terephthalate) is identified by a number 1 recycling symbol.

3 See *Team Custom Part Guide* for additional explanation and examples.