

2014 BEST Returnable Kit List

	Check	Qty	Item Description	Required/Optional	Manufacturer/Source	Part Number
BEST Control System Kit (VEX 270-1605)		1	Cortex Microcontroller	Required ³	VEX Robotics	278-2194
		1	VEXnet Joystick	Required	VEX Robotics	276-2192
		2	VEXnet Key 2.0	Required	VEX Robotics	276-3245
		1	VEXnet Backup Battery Holder	Optional ⁵	VEX Robotics	276-2243
		4	Motor Controller 7.2V 4A	Required	VEX Robotics	276-2193
		2	Large Motor	Required	VEX Robotics	276-1611
		2	Small Motor	Required	VEX Robotics	276-1610
		2	7.2 V 3000 mAh NiMH battery - modified w/ PowerPole connectors	Required ¹	VEX Robotics	276-1491
		1	Cortex Battery Adapter (attached to Cortex)	Required ³	None - Hub Assembly Req'd	n/a
		1	Charger Adapter (attached to charger)	Required ^{2,3}	None - Hub Assembly Req'd	n/a
		8	Screw Terminal Sensor Interface Cable 3-wire	Required ⁴	VEX Robotics	276-3071
		4	Screw Terminal Motor Interface Cable (red and black wires)	Required	VEX Robotics	276-1608
		4	Servo Power Adapter Cable	Required	VEX Robotics	276-2195
		1	Smart Battery Charger & power cord	Required ^{2,3}	VEX Robotics	276-2519, 276-2520
		1	8-bay AAA Smart Battery Charger & power cord	Required ²	VEX Robotics	276-1622
		6	AAA NiMH Rechargeable Batteries (installed in Joystick)	Required	VEX Robotics	276-1696
		1	USB A-A Cable	Required ²	VEX Robotics	276-1403
BEST Servo Kit (VEX 270-1682)		4	Futaba 3003/3004 Servo	Required	Tower Hobbies	LXH288 / LXZV41
		4	servo horn screw	Required	Tower Hobbies	FUTM2260 (10 pack)
		1	large round servo horn	Required	Tower Hobbies	LXH362
		2	4-arm servo horn	Required	Tower Hobbies	LXH365
		2	6-arm servo horn	Required	Tower Hobbies	LXH363
		2	24" servo extension wire	Required	Dymond Modelsport	10805
		2	40" servo extension wire (36" or 1000 mm also allowed)	Required	Dymond Modelsport	10415
		16	rubber grommet	Optional ⁵	Tower Hobbies	FUTM2310 (20 pack)
		16	brass spacer	Optional ⁵	Tower Hobbies	FUTM3650 (20 pack)
		16	servo mounting screw	Optional ⁵	Tower Hobbies	FUTM2250 (10 pack)
BEST Belt & Pulley Kit (VEX 270-1683)		1	1/4 bore, 18 groove, (small) plastic drive pulley with metal insert	Required	Stock Drive Products	A 6T16-018DF2508
		1	3/16 bore, 18 groove, (small) plastic pulley	Required	Stock Drive Products	A 6M16-018DF2506
		1	1/4 Bore 130 groove, (large) plastic drive pulley with metal insert	Required	Stock Drive Products	A 6Z16-130DF2508
		1	180 Groove, 0.080 pitch, 1/4 wide belt	Required	Stock Drive Products	A 6Z16-180025
		1	0.080 pitch, 1/4 wide belt stock, 3 ft long	Required	Stock Drive Products	A 6Z16-C025
		1	3/16 dia, 3/4 long shoulder screw w/ 8-32 thread	Required	Stock Drive Products	A 9X25-0624
		4	R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide)	Required	Big Bearing Store	R4A
Hub Provided		1	spare (replacement) servo horn screw	Required	Tower Hobbies	FUTM2260 (10 pack)
		2	small round servo horn	Optional ⁵	Tower Hobbies	LXH364
		1	76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer	Required	Inline Warehouse	n/a
		1	6mm roller blade wheel axle (any style)	Required	Inline Warehouse	n/a
		1	18" (or less) USB extension cable (between Cortex and WIFI key)	Optional ⁵	monoprice	5431
		1	VEX Programming Hardware Kit	Optional ^{2,5}	VEX Robotics	276-2186
		1	1/16" hex wrench (for pulley set screws)	Optional ²	McMaster-Carr	71285A149
		any	Containers, bags, boxes	Required ²	Hub Supplied	

Notes: ¹ Only one battery can be used on the robot at any given time.

² These items cannot be used on the robot.

³ Cortex and battery charger may be converted (by the Hub only) to PowerPole connectors, eliminating the need for the Molex to PowerPole adapters.

⁴ Up to (6) of the three wire sensor interface cables *VEX P/N 276-3071) may be substituted with old style two-wire sensor cables (VEX P/N 276-1734). A total of (8) sensor interface cables are required.

⁵ Teams may use these Returnable Kit optional items even if they are not supplied by the hub.