2014 BEST Returnable Kit List

15		Check	Qty	Item Description	Required/Optional	Manufacturer/Source	Part Number
1	BEST Servo Kit (VEX 270-1682)	1	1	Cortex Microcontroller	Required ³	VEX Robotics	278-2194
1		2	1	VEXnet Joystick	Required	VEX Robotics	276-2192
S		3	2	VEXnet Key 2.0	Required	VEX Robotics	276-3245
15		4	1	VEXnet Backup Battery Holder	Optional ⁵	VEX Robotics	276-2243
15		5	4	Motor Controller 7.2V 4A	Required	VEX Robotics	276-2193
15		6	2	Large Motor	Required	VEX Robotics	276-1611
15		7	2	Small Motor	Required	VEX Robotics	276-1610
15		8	2	7.2 V 3000 mAhr NiMH battery - modified w/ PowerPole connectors	Required ¹	VEX Robotics	276-1491
15		9	1	Cortex Battery Adapter (attached to Cortex)	Required ³	None - Hub Assembly Reqd	n/a
15		10	1	Charger Adapter (attached to charger)	Required ^{2,3}	None - Hub Assembly Reqd	n/a
15		11	8	Screw Terminal Sensor Interface Cable 3-wire	Required ⁴	VEX Robotics	276-3071
15		12	4	Screw Terminal Motor Interface Cable (red and black wires)	Required	VEX Robotics	276-1608
15		13	4	Servo Power Adapter Cable	Required	VEX Robotics	276-2195
16 6 AAA NiMH Rechargeable Batteries (installed in Joystick) Required VEX Robotics 276-1696 17 1 USB A-A Cable Required Required VEX Robotics 276-1403 18 4 Futaba 3003/3004 Servo Required Tower Hobbies LXH288 / LV 19 4 Servo horm screw Required Tower Hobbies FUTM2260 20 1 Large round servo horm Required Tower Hobbies LXH362 21 2 4-arm servo horm Required Tower Hobbies LXH363 22 2 6-arm servo horm Required Tower Hobbies LXH363 23 2 2 4' servo extension wire Required Tower Hobbies LXH363 24 2 40' servo extension wire (36' or 1000 mm also allowed) Required Dymond Modelsport 10805 25 16 rubber grommet Optional ⁶ Tower Hobbies FUTM2300 26 16 brass spacer Optional ⁶ Tower Hobbies FUTM2500 27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2500 27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2500 28 1 1/4 bore, 18 groove, (small) plastic drive pulley with metal insert Required Stock Drive Products A 6T16-018 30 1 1/4 Bore, 18 groove, (large) plastic drive pulley with metal insert Required Stock Drive Products A 6216-130 31 1 180 Groove, 0.080 pitch, 1/4 wide belt Required Stock Drive Products A 6216-130 33 1 3'16 dia, 3/4 long shoulder screw w/8-32 thread Required Stock Drive Products A 6216-020 34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Stock Drive Products A 6216-020 35 2 small round servo horn Optional ⁶ Tower Hobbies FUTM2600 36 2 small round servo horn Required Stock Drive Products A 6216-020 36 2 small round servo horn Optional ⁶ Tower Hobbies FUTM2600 36 1 6 smr roller blade wheel axle (arry style) Required Inline Warehouse n/a 37 1 7 6 mm roller blade wheel axle (arry style) Required Inline Warehouse n/a 38 1 6 smr roller blade wheel axle (arry style) Required Inline Warehouse n/a 39 1 18' (or less) USB extension cable (betwee		14	1	Smart Battery Charger & power cord	Required ^{2,3}	VEX Robotics	276-2519, 276-2520
17		15	1	8-bay AAA Smart Battery Charger & power cord	Required ²	VEX Robotics	276-1622
18		16	6	AAA NiMH Rechargeable Batteries (installed in Joystick)	Required	VEX Robotics	276-1696
19 4 servo horn screw Required Tower Hobbies FUTM2260		17	1	USB A-A Cable	Required ²	VEX Robotics	276-1403
27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		18	4	Futaba 3003/3004 Servo	Required	Tower Hobbies	LXH288 / LXZV41
27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		19	4	servo horn screw	Required	Tower Hobbies	FUTM2260 (10 pack)
16 Servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		20	1	large round servo horn	Required	Tower Hobbies	LXH362
16 Servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		21	2	4-arm servo horn	Required	Tower Hobbies	LXH365
16 Servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		22	2	6-arm servo horn	Required	Tower Hobbies	LXH363
27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		23	2	24" servo extension wire	Required	Dymond Modelsport	10805
16 Servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		24	2	40" servo extension wire (36" or 1000 mm also allowed)	Required	Dymond Modelsport	10415
27 16 servo mounting screw Optional ⁶ Tower Hobbies FUTM2250		25	16	rubber grommet	Optional ⁵	Tower Hobbies	FUTM2310 (20 pack)
28		26	16	brass spacer	Optional ⁵	Tower Hobbies	FUTM3650 (20 pack)
29 1 3/16 bore, 18 groove, (small) plastic pulley Required Stock Drive Products A 6M16-018		27	16	servo mounting screw	Optional ⁵	Tower Hobbies	FUTM2250 (10 pack)
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		28	1	1/4 bore, 18 groove, (small) plastic drive pulley with metal insert	Required	Stock Drive Products	A 6T16-018DF2508
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		29	1	3/16 bore, 18 groove, (small) plastic pulley	Required	Stock Drive Products	A 6M16-018DF2506
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		30	1	1/4 Bore 130 groove, (large) plastic drive pulley with metal insert	Required	Stock Drive Products	A 6Z16-130DF2508
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		31	1	180 Groove, 0.080 pitch, 1/4 wide belt	Required	Stock Drive Products	A 6Z16-180025
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		-	1	0.080 pitch, 1/4 wide belt stock, 3 ft long	Required	Stock Drive Products	A 6Z16-C025
34 4 R4AZZ Ball Bearing (0.25 ID x 0.75 OD x 0.28 wide) Required Big Bearing Store R4A 35 1 spare (replacement) servo horn screw Required Tower Hobbies FUTM2260 36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		-	1	-	Required	Stock Drive Products	A 9X25-0624
36 2 small round servo horn Optional ⁵ Tower Hobbies LXH364 37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149			4	,	•		
37 1 76mm roller blade wheel (78A to 82A) w/ bearings and 6mm spacer Required Inline Warehouse n/a 38 1 6mm roller blade wheel axle (any style) Required Inline Warehouse n/a 39 1 18" (or less) USB extension cable (between Cortex and WIFI key) Optional ⁵ monoprice 5431 40 1 VEX Programming Hardware Kit Optional ^{2.5} VEX Robotics 276-2186 41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149	Hub Provided				Required		FUTM2260 (10 pack)
41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149			2	small round servo horn	Optional ⁵	Tower Hobbies	
41 1 1/16" hex wrench (for pulley set screws) Optional ² McMaster-Carr 71285A149		-			•		
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		40	1	3 3	Optional ^{2,5}		276-2186
any Containers hade hoves		41	1				71285A149
any Containers, bags, boxes Required France Capplica			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 adapter/s.

⁴ Up to (6) of the old two wire sensor cables may be substituted (VEX P/N 276-1734).

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