



# Bill of Materials Competition Kit

<b>Brackets &amp; Structural Elements</b>	<b>Qty</b>
Single Servo Mounting Bracket	4
Servo Joint Bracket w/ Pivot Bearing	4
Dual Servo Bracket	2
Flat Interconnect Bracket	8
L Connector Bracket	12
Structural Channel - 32mm x 32mm x 32mm	4
Structural Channel - 32mm x 32mm x 96mm	4
Structural Channel - 32mm x 32mm x 160mm	4
Structural Channel - 32mm x 32mm x 288mm	6
Structural Channel - 32mm x 32mm x 416mm	4
Flat Bar 288mm x 16mm	4
Angle Bar 288mm x 16mm	2
Angle Bar 144mm x 16mm	2
Perforated Plate 64mm x 192mm	4
Structural Tubing .625" diameter x 80mm	4
Structural Tubing .625" diameter x 145mm	4
Structural Tubing .625" diameter x 220mm	4
Tube Clamp	10
<b>Servos &amp; Motors</b>	<b>Qty</b>
HS-475HB Standard Servo w/ Carbonite Gears	4
Spline Metal Servo Horn (Non-Tapped)	4
Servo Y Adapter	2
18" Servo Wire Extension	4
152 RPM 12V DC Gearbox Drive Motor with 6mm D Shaft	4
DC Motor Connection Wire	4
37mm Clamping Motor Mount w/ Fasteners	4
Gear-to-Wheel Hub Spacer w/ Fasteners	4
Bronze Flanged-Sleeve Bearing 3/16" Shaft Dia., 5/16" OD, 1/2" Length	24
Sintered Steel Set Screw Shaft Collar 3/16" Bore, 7/16" OD, 1/4" Length	12
<b>Fasteners</b>	<b>Qty</b>
Znc-Pltd Stl Machine Screw Nut W/Tooth	100
Alloy Steel Socket Head Cap Screw 6-32 Thread, 1/2" Length	100
Alloy Steel Socket Head Cap Screw 6-32 Thread, 5/16" Length	100
Alloy Steel Button Head Cap Screw 6-32 Thread, 3/8" Length	50
Nylon Unthreaded Round Spacer 3/8" OD, 1/8" Length	24
Nylon Unthreaded Round Spacer 3/8" OD, 3/8" Length	12
Aluminum Female Threaded Hex Standoff 1/4" Hex, 1" Length	12
Aluminum Female Threaded Hex Standoff 1/4" Hex, 2" Length	12

**Wheels, Gears, Drive Train**

	<b>Qty</b>
3" Diameter Wheel Hub/Tire	4
4" Diameter Wheel Hub/Tire	4
Clamping Hub Mount 3/16" Bore	12
6mm Bore Set Screw Motor D Shaft Mount Hub	4
120 Tooth, 32 Pitch Hub Gear	2
80 Tooth, 32 Pitch Hub Gear	4
40 Tooth, 32 Pitch Hub Gear	4
3/16" x 100mm SS Precision D Shafting	12

**Sensors, Controllers, & Batteries**

	<b>Qty</b>
LEGO MINDSTORMS Education NXT Base Set	1
LEGO Touch Sensor (in addition to NXT Base Set sensors)	2
LEGO Light Sensor (in addition to NXT Base Set sensor)	1
HiTechnic NXT Compass Sensor	1
8-Cell AA Battery Holder	1
12v NiMh 3000 mah Rechargeable Battery	1
Battery Charger	1
On/Off Battery Harness	1
DC gearhead motor shaft encoders	2
FTC Bluetooth Dongle	1
Logitech Gaming Controller	1
HiTechnic DC Motor Controller for TETRIX	1
HiTechnic Servo Controller for TETRIX	1
HiTechnic Touch Sensor Multiplexer	1
LEGO Hard Point Connector	12

**Software**

	<b>Qty</b>
LEGO MINDSTORMS Education NXT Software	1
LabVIEW for FTC	1
RobotC	1
FTC Team License	1

**Storage & Tools**

	<b>Qty</b>
Plastic Storage Bin with Snap-On Lid and Parts Summary	1
Hex Key 7/64"	1
Hex Key 3/32"	1
Hex Key 1/16"	1
Hex Key 5/64"	1