

# Xtreme BOTS 15 Pound Class Internal Inspection Request Form

Team Name: \_\_\_\_\_ Bot Name: \_\_\_\_\_

School Name: \_\_\_\_\_ Pit #: \_\_\_\_\_

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To prepare for Internal Inspection:

## 1) Set up your pit table area

- Put your bot on the table or the floor, but be sure to place it such that the wheels, legs or other motion-producing components are suspended in the air by at least 1/4 inch.
- Unpack and arrange your tools. You may need them for inspection.

## 2) Weigh your bot

- If you think your bot might be overweight, check-weigh it on an official Bots scale. You can use the scale anytime it's not being used by Bots personnel.

## 3) Open up your bot for inspection

- Remove external panels to expose the interior.
- Expose batteries and electrical system wiring.
- Expose any pneumatic system components.
- Keep all safety covers and restraints on, if possible.

## 4) Notify Safety/Tech that your bot is ready

- Fill out your team name, bot name and pit number on the top of this form.
  - Take this form to the Safety/Tech Area and notify the safety administrator that your bot is ready for the internal inspection.
  - Do not bring your bot to the Safety/Tech Area. A safety inspector will come to your pit table.
  - Have someone at your pit table at all times when waiting for inspection.
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(To be completed by Bots inspector) Pass  Fail  Time: \_\_\_\_\_

Inspector: \_\_\_\_\_  
(print name) (signature)

Fail - Items to Fix: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Xtreme BOTS 15 Pound Class

## Internal Inspection Checklist

<p><b>General Inspection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Secure covers on all sharp points/edges/corners</li> <li><input type="checkbox"/> Secure restraints for all pinch/motion hazards</li> <li><input type="checkbox"/> No use of disallowed construction materials</li> <li><input type="checkbox"/> Any restricted-use materials are used correctly</li> <li><input type="checkbox"/> No Internal Combustion Engine</li> <li><input type="checkbox"/> No stored high-pressure pneumatics</li> <li><input type="checkbox"/> No hydraulic system</li> <li><input type="checkbox"/> Bot name on exterior in 1/4" or larger letters</li> </ul> <p><b>Electrical Inspection</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Master switches mechanically shut off batteries</li> <li><input type="checkbox"/> Master switches are 2-position &amp; fully-enclosed</li> <li><input type="checkbox"/> Master switch access requires no parts removal</li> <li><input type="checkbox"/> Access to all switches is outside weapons paths</li> <li><input type="checkbox"/> Batteries are allowed type (SLA, NiCd, NiMH, Li-on)</li> <li><b>Lithium Polymer (LiPo) batteries are prohibited</b></li> <li><input type="checkbox"/> Batteries are mounted securely within chassis</li> <li><input type="checkbox"/> Battery terminals/connections are insulated</li> <li><input type="checkbox"/> Primary electrical terminals are covered/insulated</li> <li><input type="checkbox"/> All wiring properly installed and insulated</li> <li><input type="checkbox"/> Maximum voltage does not exceed 28 VDC</li> </ul> <p><b>Radio Control Equipment</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Uses IFI, FM R/C or allowed custom controller</li> <li><input type="checkbox"/> R/C system not AM, pre-1991, or 72MHz</li> <li><input type="checkbox"/> R/C system has two sets of crystals</li> <li><input type="checkbox"/> Custom equipment complies with FCC regulations</li> </ul>	<p><b>Low-Pressure Pneumatic System</b></p> <p style="text-align: center;"><i>&gt; Verify that system is depressurized</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Tank is rated for at least 1.5x stored pressure</li> <li><input type="checkbox"/> Tank max volume less than 8 Cu. ft.</li> <li><input type="checkbox"/> Tank has pressure-reliefs or blowout plugs</li> <li><input type="checkbox"/> Tank has a shut-off valve</li> <li><input type="checkbox"/> Pneumatic components are correctly rated</li> <li><input type="checkbox"/> Components are mounted securely within chassis</li> <li><input type="checkbox"/> Components are undamaged</li> <li><input type="checkbox"/> Actuators are attached properly</li> <li><input type="checkbox"/> Pressure purge valve to relieve pressure</li> <li><input type="checkbox"/> Purge and shut-offs are outside weapons paths</li> <li><input type="checkbox"/> Access for tank filling is safe and stable</li> </ul> <hr/> <p><b>External Equipment</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Equipment setup/removal takes less than 2 minutes</li> <li><input type="checkbox"/> Equipment does not interfere with operations</li> <li><input type="checkbox"/> Homing/Targeting laser is class II or below</li> </ul> <hr/> <p><b>Additional Items</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MultiBot meets all specific requirements</li> <li><input type="checkbox"/> StompBot complies with "Walker" requirements</li> <li><input type="checkbox"/> Any lighting/sound system can be deactivated</li> </ul>
<p><b>Powered Weapons</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Weapons are not electrical/electromagnetic</li> <li><input type="checkbox"/> Weapons do not use heat, fire or explosive</li> <li><input type="checkbox"/> Weapons are non-fouling and non-obscuring</li> <li><input type="checkbox"/> Weapons/Flywheels are securely attached</li> <li><input type="checkbox"/> Spring-powered weapon has manual safety release</li> <li><input type="checkbox"/> Deactivated weapons pose no hazard to people nearby</li> <li><input type="checkbox"/> Projectile tether length does not exceed 4'</li> <li><input type="checkbox"/> Less than 30 minutes to change modular weapon</li> </ul>	<p>Notes:</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

# Xtreme BOTS 15 Pound Class Functional Test Request Form

Team Name: \_\_\_\_\_ Bot Name: \_\_\_\_\_

School Name: \_\_\_\_\_ Pit #: \_\_\_\_\_

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To prepare for Functional Testing:

## 1) Charge the batteries

- Check/charge the primary and secondary power batteries.

## 2) Re-assemble the bot

- Install all internal components.
- Install all external covers and armor.
- Attach all safety covers and restraints.

## 3) Re-weigh the bot

- If you have to make significant changes to your bot to reduce the weight, notify the safety administrator, as you may need another internal inspection.

## 4) Notify Safety/Tech that your bot is ready

- Fill out your team name, bot name and pit number on the top of this form.
  - Take this form to the Safety/Tech Area and notify the safety administrator that your bot is ready for the functional testing.
  - Do not bring your bot to the Safety/Tech Area (except to weigh it). The safety registrar will notify you at your pit table when your bot will be tested.
  - When you are notified, bring your bot, your transmitter and your adult supervisor to the Safety/Tech Area.
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(To be completed by Bots inspector)    Pass     Fail     Time: \_\_\_\_\_

Inspector: \_\_\_\_\_ (print name)                                  \_\_\_\_\_ (signature)

Fail - Items to Fix: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Xtreme BOTS 15 Pound Class Functional Test Checklist

<p><b>Bot Weight and Appearance</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bot total weight is: _____pounds             <ul style="list-style-type: none"> <li>&gt; <b>For a MultiBot, weigh segments separately and attach stickers indicating the weights</b></li> </ul> </li> <li><input type="checkbox"/> Appearance is acceptable</li> <li><input type="checkbox"/> Name of bot is easily readable</li> </ul>	<p><b>Powered Weapon Systems Testing</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Start each weapon system moving</b></li> <li><input type="checkbox"/> Weapons systems are reliably controlled             <ul style="list-style-type: none"> <li>&gt; <b>Transmitter OFF while weapon is moving</b></li> </ul> </li> <li><input type="checkbox"/> Drive power to weapon systems stops when transmitter is shut off</li> <li><input type="checkbox"/> Spinning part comes to a full stop within 30 seconds after transmitter shut-off.</li> <li><input type="checkbox"/> Weapon will not cause damage to Bot</li> </ul>
<p><b>Pneumatics Check</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Pressurize the system</b></li> <li><input type="checkbox"/> No,,problems pressurizing</li> <li><input type="checkbox"/> Verify pressures do not exceed 150 psi</li> </ul>	<p><b>Large Spring Arming/Disarming</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Arm the spring using radio control</b></li> <li><input type="checkbox"/> Large spring can be armed remotely             <ul style="list-style-type: none"> <li>&gt; <b>Transmitter OFF while spring is armed</b></li> </ul> </li> <li><input type="checkbox"/> No motion or disarming at transmitter turn-off             <ul style="list-style-type: none"> <li>&gt; <b>Manually release the spring</b></li> </ul> </li> <li><input type="checkbox"/> Spring can be manually released in 30 seconds</li> <li><input type="checkbox"/> No body part in weapon path during release</li> </ul>
<p><b>Activation of Bot</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bot is in full battle-ready configuration             <ul style="list-style-type: none"> <li>&gt; <b>Verify that Bot is completely deactivated</b></li> <li>&gt; <b>Mount bot on a support that suspends the wheels, tracks or legs in the air.</b></li> <li>&gt; <b>Check that all Master Switches are OFF</b></li> <li>&gt; <b>Turn the transmitter ON</b></li> </ul> </li> <li><input type="checkbox"/> No bot movement when transmitter turned on             <ul style="list-style-type: none"> <li>&gt; <b>Activate the Bot</b></li> </ul> </li> <li><input type="checkbox"/> Activation requires no more than 1 person</li> <li><input type="checkbox"/> Person not in weapons path during Activation</li> <li><input type="checkbox"/> Activation can be done within 30 seconds</li> <li><input type="checkbox"/> No panels/parts removal during Activation</li> <li><input type="checkbox"/> Activation safety is not sequence-dependent</li> </ul>	<p><b>Autonomous Features</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Cycle the transmitter OFF, then ON</b></li> <li><input type="checkbox"/> Autonomous features start up disabled             <ul style="list-style-type: none"> <li>&gt; <b>Remotely activate autonomous features</b></li> </ul> </li> <li><input type="checkbox"/> Light indicates autonomous features activated</li> <li><input type="checkbox"/> No erratic behavior during autonomous operation             <ul style="list-style-type: none"> <li>&gt; <b>Shut OFF transmitter</b></li> </ul> </li> <li><input type="checkbox"/> All autonomous features cease functioning</li> </ul>
<p><b>Motion System Fail-Safe Test</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Move the motion system forward/backward</b></li> <li><input type="checkbox"/> Bot motion control is continuous, not on/off</li> <li><input type="checkbox"/> Reliable control of the motion-producing parts</li> <li><input type="checkbox"/> Motion speed greater than 6 inches-per-second             <ul style="list-style-type: none"> <li>&gt; <b>Move the motion system at high speed</b></li> <li>&gt; <b>Transmitter OFF with motion at speed</b></li> </ul> </li> <li><input type="checkbox"/> Drive power to motion system stops when transmitter is shut off.</li> </ul>	<p><b>Deactivation of Bot</b></p> <ul style="list-style-type: none"> <li>&gt; <b>Turn Transmitter ON (if necessary)</b></li> <li>&gt; <b>Deactivate the Bot</b></li> <li><input type="checkbox"/> Deactivation requires no more than 1 person</li> <li><input type="checkbox"/> Person not in path of weapons during deactivation</li> <li><input type="checkbox"/> Complete deactivation in less than 45 seconds</li> <li><input type="checkbox"/> No panels/parts removal during deactivation</li> <li><input type="checkbox"/> Deactivation safety is not sequence-dependent</li> </ul>