



Functional Safety/Technical Inspection Checklist

School	Robot Name	Weight	Pass	Fail	Time	Inspector
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Functional Testing (check if OK)

If the Bot Uses Pneumatics

- 1. Check tank and downstream pressures. If all pneumatic system pressures are OK then add Orange tape to top and bottom

Bot Activation Test

- 1. Check the Bot to confirm that it is completely Deactivated
- 2. Depending upon the weapon system(s), the Bot is moved to a test area or to the Test Box
- 3. Mount the Bot on a support that suspends the wheels, tracks or legs in the air
- 4. Check that all Master Switches are Off
- 5. Turn the transmitter On with Master Switches still Off
- 6. No Bot movement when transmitter is turned On
- 7. Activate the Bot
- 8. Make sure activation requires no more than 1 person
- 9. Person activating is not in path of weapon(s) during Activation
- 10. Activation can be done within 30 seconds
- 11. No body part more than 2 inches inside bot during activation
- 12. Activation safety is not sequence-dependent
- 13. External pilot light is visible for each Master Switch

Operation and Fail-Safe Test

- 1. Move the wheels/tracks/legs of the Bot both forward and backward
- 2. Bot motion control is continuous and reliable, not Start/Stop
- 3. Movement speed is greater than 6 inches-per-second
- 4. Move the Bot wheels/tracks/legs at high speed
- 5. Turn the transmitter Off while wheels/tracks/legs are moving
- 6. Drive power to motion system stops when transmitter is shut off.

If Bot Uses Powered Weapon System(s)

- 1. Start each weapon system moving
- 2. Weapons systems are reliably controlled
- 3. Weapon will not cause damage to Bot
- 4. Turn off transmitter while each weapon is moving
- 5. Drive power to weapon system stops when transmitter is shut off.
- 6. Spinning part comes to a full stop within 30 seconds after transmitter shut-off.

If Bot Uses a Large Spring

- ☒ 1. Arm the spring using remote transmitter
- ☒ 2. Large Spring is armed remotely
- ☒ 3. Turn off transmitter while spring is armed
- ☒ 4. No motion or disarming when transmitter is shut off
- ☒ 5. Manually release the spring
- ☒ 6. Spring can be manually released within 30 seconds
- ☒ 7. No body part in weapon path during manual release

If Bot Has Autonomous Features

- ☒ 1. Cycle transmitter Off, then On
- ☒ 2. Autonomous feature starts up disabled
- ☒ 3. Remotely activate autonomous function(s)
- ☒ 4. Light indicates autonomous function activated
- ☒ 5. No erratic behavior during autonomous operation
- ☒ 6. Shut off transmitter during autonomous action
- ☒ 7. All autonomous features cease functioning

If Bot uses Lights/Sound

- ☒ 1. No laser more powerful than Class II
- ☒ 2. No bright/distracting lights
- ☒ 3. No ultra-violet lights

If Bot Uses a Special Configuration

- ☒ 1. Maximum jump height does not exceed 2 feet
- ☒ 2. Jumping will not damage Bot
- ☒ 3. Ground-effect Bot does not use external aerodynamic devices (only air cushion)

Bot Deactivation

- ☒ 1. Deactivate the Bot
- ☒ 2. Deactivation requires no more than 1 person
- ☒ 3. Not in path of weapon during Deactivation
- ☒ 4. Deactivation in less than 45 seconds
- ☒ 5. No body part more than 2 inches inside bot during Deactivation
- ☒ 6. Deactivation safety is not sequence-dependent

Ver-1.2 Bot Activation item 13 added