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Introduction

Whether you're a hunter, field trialer, running hunt tests, using spaniels, pointers or retrievers, the Bumper Boy Ultra II series will provide you with reward-based training methods never before possible. This reward-based system will have the largest impact on your dog's ability to remember, retrieve, hunt, build desire and learn. This unique training system will provide your dog with a more enjoyable training experience, and help him learn faster. Whether you are teaching "sit to flush" or complicated multiple marks, you and your dog can look forward to increased enjoyment and more effective use of time.

This sporting dog system is designed to simulate visual, and aural dynamics of a human training assistant, and the rapidly changing environment of a hunting experience. This method produces better marking dogs than any conventional training methods through use of reward-based techniques stressed by many world-renowned animal trainers such as Karen Pyior, PHD, an animal behavior expert with the University of San Diego.

Introduce Your Dog to Bumper Boy

Like any new training tool the dog should be introduced to it properly. Introduce the new type of bumper; it may smell and fly differently than the bumpers you use. In some cases the dog thinks the flapping bumper is a live flyer and will hunt to find a bird. This is temporary and is quickly learned. Then introduce images, different sounds, motion and sound of shot. This can be accomplished in normal yard training. Now you will see your dog's eyes light up every time you put Bumper Boy into your car.

Safety

The launcher can project bumpers at life threatening velocities. When loaded, it can be as dangerous as a gun. It should be treated like a weapon.

- Children should not have access to the equipment or ammunition.
- At no time should you lean over the launcher - especially during the loading process
- Turn the power on before loading the launcher to stabilize the electronics.
- When cocking the launcher, make sure each trigger is positively engaged (listen for the click). Use extreme caution when cocking the Firing Pins.
- Never point the launcher at anything except sky.
- Never move the launcher when loaded.
- Clear the breech when you have finished your training (See Unloading Loaded Launcher on Page 18)

Components of the Bumper Boy Sportsman Model



Figure 1. *Standard Bumper Boy Sportsman Package Components*

Standard Sportsman Package

Bi-Directional Launcher with receiver
 100 blank .22 caliber shells
 Sportsman transmitter
 Owner's manual
 Battery charger
 Standard speaker: Grouse sound
 Two Smart Bumpers with streamers
 and throw handles

Optional Equipment (Figure 2)

Advanced sound system: Duck sound
 Inflatable boat
 Super Birds
 Camouflage bag

Figure 2A: Two Shooter Camo Case

The carrying bag provides for easy field movement – Case holds two launchers, four bumpers, and electronics.



Figure 2B: Superbirds

Provides a complete substitute for dead birds. Wing attachments and scent injection available. High-flying and very motivational.



Figure 2. *Optional Equipment for the Bumper Boy Sportsman Model*

UPGRADE OPTIONS (Figure 3)

Pro Transmitter - The pro transmitter can control up to 16 Bumper Boy launchers Double-sided gunner image with launcher mount
 Motion motor attachment (Unit must have the advanced sound system)



Figure 3A: *Advanced Sound System*
 Includes all four sounds - Duck, Pheasant, Goose, Human. Comes with louder, aluminum, horn speaker



Figure 3B: *Pro Transmitter*
 Controls multiple launchers
 Complete sounds
 Image/Motion control



Figure 3C: *Image/Motion*
 Simulates the movement of a person in the field. Provides queuing, help, and simulates retired guns. Ultra-light and compact – 3lbs



Figure 3D: *Deluxe 4 Shooter*
 Bi-Directional
 Fire four times without reloading
 Die-cast aluminum construction
 Fold-up legs
 Lightweight – 9lbs
 Dimensions – 21" x 11" x 8"

Figure 3. *Bumper Boy Upgrade Options*

OVERVIEW

Sportsman Transmitter Overview: (Figure 4)
Controls sound and launching during operation.

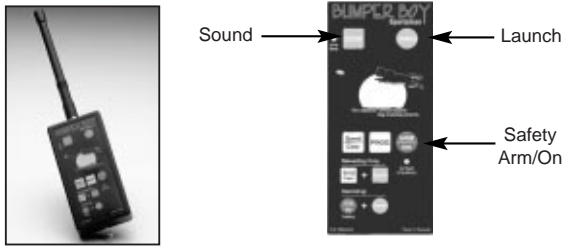


Figure 4. Sportsman Transmitter and Control Panel

SOUND Key - Controls the duck sound on advanced model or the grouse sound on standard models.

LAUNCH Key - Each time the launch key is pressed, it will fire a bumper. By repeating another bumper can be launched. The launch key should be held down positively for at least one second.

ARM/ON Key - This key provides a safety switch that will stop the unit from transmitting a launch command when in the off position. Press the key to arm the transmitter. The armed or on condition is indicated by the display of the red light. This light indicates that the unit is armed and ready to launch.

NOTE

The transmitter will automatically turn off (disarm) after 45 seconds. The "Arm(Caution)" light will go out. The ARM/ON key must be pressed again in order arm the system.

PROGRAM Key - is used to synchronize the transmitter to the receiver/launcher.

Send/Clear Key - Used to synchronize the transmitter with the receiver, or, to reset the order bumpers are launched.

Charger Receptacle - Accepts connector from the four-lead wall charger to recharge the included Nickel - Metal Hydride battery.

Antenna Connection - Accepts the short antenna for communication with the receiver unit.

Antenna - Required for communication between the transmitter and receiver.

Lanyard Ring - For attaching the transmitter to a lanyard.

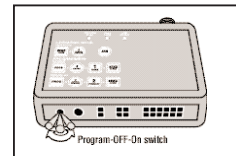
LAUNCHER OVERVIEW

The Bumper Boy launcher projects Bumper Boy Smart Bumpers or Super Birds. The receiver accepts the coded launch signal from the transmitter and activates the servos that control launch.



Figure 5. Sportsman Receiver
(with Standard Sound Speaker)

Receiver (Figure 5): The receiver is mounted loosely on the end of the launcher frame and connected to the sound speaker and the mechanical servos that initiate launching a bumper. The main features of the receiver are:



Bumper Boy Receiver Toggle Switch (Figure 6)

Program Position - When the toggle switch is in the left position the receiver will accept a new program and can be synchronized with the transmitter

On Position - When the toggle switch is to the right the unit will be ON.

Off position - When the toggle is in the center, or off position, the unit will turn off. The toggle switch must be in the off position in order to charge the battery.

INDICATOR LIGHTS

Program Mode (Green): A green light indicates that the receiver is ready to receive a program. This green light will go out when a program or synchronization has been completed.

On Light (Red): Indicates that the launcher circuits are ready to launch a bumper. The red on light will also flash when receiving commands from the transmitter.

Low Battery Light (Red): Blinking red light indicates that the batteries need to be recharged. Normally the unit will continue to function for the day it first starts blinking; though, when the system detects a low battery condition, the unit shuts off the sound system. During charging the low battery light will flash indicating charging is occurring.

Antenna Connection - Accepts the long antenna for communication with the receiver.

Charger connection - Accepts connector from the four-lead wall charger to recharge the included Nickel - Metal Hydride battery.

Advanced Sound (2 Pin) **Connector** - Connects receiver to the optional advanced sound (duck) system.

Standard Sound/Motion (4 Pin) **Connector** - Connects the standard (grouse) speaker or the optional motion accessory to the receiver unit.

Servo (12 Pin) **Connector** - Connects the receiver to the launcher.

LAUNCHER



Bumper Boy Sportsman Frame and End Plates (Figure 7)

Frame and End Plates – (Figure 7) Support the launcher assemblies, receiver, speaker, and angle adjustment rods.

Collapsible Stakes – Help support the unit during launches.

Angle Adjustment Rods (two) – Threaded rods support the firing plate and provide the means of adjusting the angle of the launcher tube.

Removable End Plate – The end plate opposite the receiver can be easily removed using wing nuts to change the direction of one launcher assembly.



Figure 8. Bumper Boy Launcher Assembly

Each Launcher Assembly contains all the components for launching a bumper. Figure 9 is a detailed drawing of the launcher assembly and its component parts. Principal components and their functions are:

Firing Assembly:

Launcher Assembly Latch - Secures the Firing Assembly to the Launcher Tube and Firing Plate.

Firing Pin Assembly - Contains the mechanical components that set and ultimately release the firing pin. Includes:

Cocking Handle - Pulls the firing assembly to the cocked position.

Servo - Moves the servo arm to pull the lever arm from the firing assembly.

Servo Arm - Activates the Lever Arm.

Lever Arm - Sets and releases the Firing Pin.

Firing Pin - Activates the .22 caliber blank cartridge.

Barrel and Firing Plate:

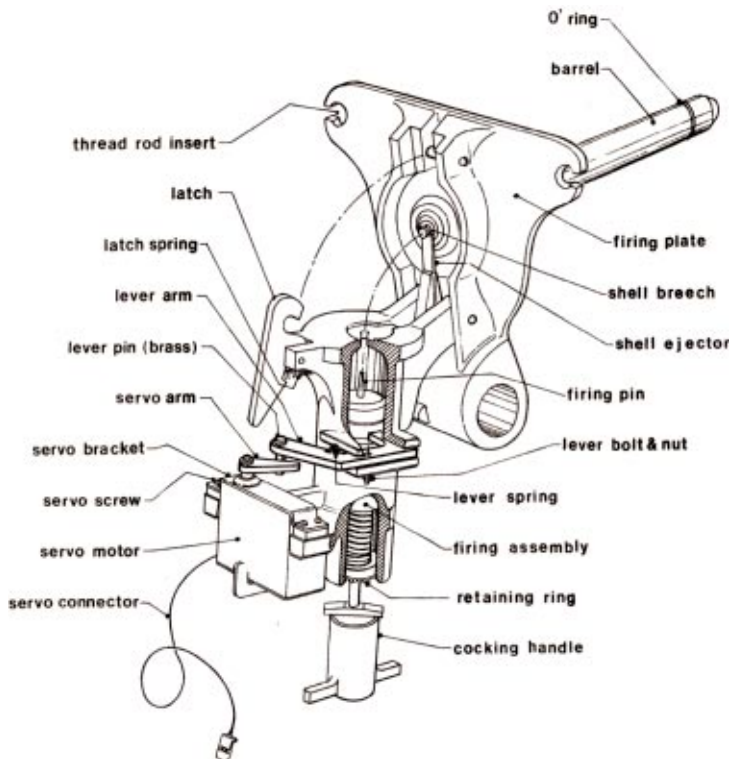
Barrel - Accepts the Smart Bumper or Super Bird for launching.

Breech - Accepts a .22 cal blank cartridge to provide the energy to launch Smart Bumpers or Super Birds.

Extractor - Pulls the spent cartridge from the breech to assist with removal of the shell.

Firing Plate - Provides a platform to secure the launcher tube to the frame of the launcher. The Angle Adjustment Rod fits into the threaded rod insert at the edge of the Firing Plate.

Figure 9. Launcher Assembly Cutaway



Theory of Operation

Bumper Boy provides a remote system that allows you to offer a variety of training scenarios to your dogs. Digital coding eliminates interference from other systems working in the immediate area. Bumper Boy accessories such as the motion simulator and the Advanced Sound Module provide additional resources to help your dog's performance.

The Bumper Boy Transmitter has two functions, programming the receiver to respond to the launch signal, and transmitting the signal to activate the sound system and the launch signal. The Sportsman transmitter simplifies this process with a fixed program that controls one specific launcher.

The Bumper Boy Receiver accepts a valid code sequence and the launch signal and activates the launch servos to initiate launch.

The launcher projects Smart Bumpers or Super Birds with energy generated by firing a .22 blank cartridge. The trainer activates the sound and launch remotely with the Bumper Boy transmitter. On receipt of the correct coded signal the receiver activates the speaker or the launcher tube servo. The servo releases the launcher firing pin, firing the .22 caliber cartridge.

Figure 9 shows the mechanical firing mechanism in the Firing Assembly. When the cocking handle is pulled down, the firing pin is pulled back from the firing chamber and the firing pin spring, part of the firing assembly, is compressed. The spring-loaded lever arm falls into a keyway in the firing pin and firing assembly. You will hear a distinct click when the lever arm falls into the keyway. When the launcher tube servo is activated, the servo arm pulls the lever arm from the keyway, releasing the firing pin. The firing pin initiates the .22 caliber blank cartridge, launching the bumper.

Quick Start Your Bumper Boy Sportsman

Unpack the Bumper Boy. Make sure you have received all the equipment ordered. Standard Equipment:

- ✓ Two Smart Bumpers
- ✓ Two Streamers
- ✓ Two Power Handles, (black spheres with holes to accommodate the bumper ropes), for hand throwing Bumpers
- ✓ Standard Speaker or Advanced Speaker
- ✓ Wire Tie
- ✓ Sportsman Launcher Assembly with Receiver
- ✓ Sportsman Transmitter
- ✓ Short Antenna (for transmitter)
- ✓ Long Antenna (for receiver)

ASSEMBLE THE COMPONENTS

• Transmitter Assembly

Screw the short antenna into the transmitter antenna connection. The black "O" Ring should be inserted between the antenna and the antenna connection.

• Receiver Installation

Install the male 12-position launcher connector to female connector on the receiver. Press firmly to make sure connector is engaged.

Mount receiver into the slotted area in the end plate.

Loosely fasten the receiver to the end plate, with the antenna receptacle up, using the washers and nuts furnished.

NOTE

Do not tighten the receiver against the end plate. The receiver should be mounted so that it will slide up and down easily to reduce recoil.

Secure the 12-position cable to the receiver with the wire tie already furnished.

Install the long antenna into the antenna connection with the black "O" Ring

• Standard Speaker Installation (See Figure 5)

Remove the Velcro Strip with the adhesive backing from the Standard Speaker by separating it from the Velcro patch attached to the speaker.

Remove the adhesive backing from the Velcro strip and attach the strip. Install the tape with the long axis along the long axis of the top of the receiver.

Attach the small speaker to the Velcro. Orientation of the speaker can be changed to point toward the working dog in the field.

Route the speaker cable behind the end plate, through the cable access slot, to the bottom of the receiver.

Plug speaker into the 4-position plug on the receiver labeled motion and secure excess cable with the wiring strap.



**Advanced Speaker Installation
(See Figure 10)**

Remove stand on speaker, this will not be required.

Install mounting swivel to the speaker bracket making sure the speaker can be centered over the receiver (see Figure 10).

Install swivel into receiver slot and tighten.

Route the connector and wiring behind the end plate and through the cable access slot.

Plug the two-pole male speaker connector into the two-pole speaker connection on the receiver. (Labeled "sound"). Use the wiring strap to secure excess wire.

The mounting swivel can be used to orient the speaker towards the working dog.



Assemble the bumpers (Figure 11)

Slide a streamer over each bumper rope.

Tie a figure eight knot (a fat overhand knot with an extra loop across the back) in the bumper rope to secure the streamer near the top of the bumper.

Slide the end of each bumper rope through a Power Handle. The rope should feed out of the Power Handle through the depression.

Tie a figure eight knot near the end of the bumper rope and pull the knot into the depression.

Configure the Launcher (Bi-Directional Mode)

The Sportsman Bumper Boy can be configured to launch the bumpers in one direction, or in opposite directions. The unit is shipped with both launcher tubes oriented in the same direction. To configure the unit to launch bumpers in opposite directions proceed as follows:

- Remove the three wing nuts and their associated washers and lock washers.
- Remove the end plate.
- Rotate the threaded angle adjustment rod on the removable end plate 90 degrees, past the top of the end plate, so it will lie on the opposite side of the launcher frame when the end plate is replaced
- Pull the near Launcher Assembly and the spacer from the launcher frame.
- Rotate the Launcher Assembly 180 degrees in a horizontal plane.
- Replace the Launcher Assembly and the spacer on the launcher frame.

CAUTION

Be sure the wires leading to the launcher tube servo are free to remain slack when the launch tube is rotated on the launcher frame and the launcher tube breach is opened.

- Replace the end plate and the washers and wing nuts

Use the same method to return the launcher tubes to the same direction.

CHARGING THE RECEIVER AND TRANSMITTER BATTERIES

Charging the Receiver

Move the toggle switch to the “off” position.

Plug the charger into an 110V AC outlet.

Plug a charger connector into the charging receptacle on the receiver. Charging is indicated by a flashing red light.




Figure 12. Battery Charger

Charging the Transmitter

Plug the charger into an 110V AC outlet.

Plug a charger connector into the charging receptacle on the transmitter.

 Press the “ARM/ON” key . Transmitter will indicate charging by displaying a flashing red light.

Both transmitter and receiver will charge for approximately 8-12 hours, and then turn off automatically. (Flashing red charging light will stop.) The charging program also conditions the Nickel - Metal Hydride batteries.

In House Test & Operation

This test confirms that the transmitter and receiver are functioning properly and that the servos are activated in sequence.


At the Launcher


☞ Open up launch assemblies by unlatching the firing plate – Press on “Latch”(See Figure 9)

☞ Turn the receiver to “ON” (move the toggle switch to right). The “ON” light will indicate red. Then the light will turn off indicating the unit is ready for operation

Note: Do not load shells or cock Firing Pins for this test

At the Transmitter

 Press the “ARM/ON” key. Red light indicates that the safety is disengaged and the unit is armed and ready to fire.

 Press the “SOUND” key. The speaker responds with sound (duck or grouse).


 Press and hold the “LAUNCH” key positively for one second.


At the Launcher

You will see the servo activate. By pressing the “LAUNCH” key again the other servo will activate. Press again and the first servo will activate. The system will continue to loop through this sequence with a longer delay after the second activation.

Selecting Firing Order

If you're launcher is set up in bi-directional mode you need to know which launcher tube will fire first. This can be accomplished in two ways.

 **Method 1.** Conduct the In House Test. (page 14) Press the “LAUNCH” key and observe which servo is activated. The other launch assembly will fire next. Orient the launcher to fire that tube first, or, repeat to cycle to the other launch assembly.

 **Method 2.** Reset the transmitter. Press the “SEND/CLEAR” key, then the “SOUND” key. The launcher assembly closest to the receiver will fire first.

Load Test

This test confirms that the servos activate the trigger and release the firing pin. No shells/cartridges should be inserted.

At the Launcher

Open the breech for each Launcher Tube (so you don't damage the Firing Pin).

Cock each Firing Assembly. Pull the Cocking Handle down until you hear the firing pin fall into the keyway (distinct click).

Repeat the In House Test.

Observe that the firing pin moves from within the firing assembly to the position that will initiate the .22 blank cartridge.

Note

Opening the breech prevents the firing pin from striking the edge of the breech. As long as the breech is open you can run this test without damaging the firing mechanism.

Field Setup

Your Bumper Boy Sportsman is a flexible tool that will provide realistic training situations to prepare your dog for hunting and competition. The following step-by-step procedures will assist you to safely and effectively use the Sportsman in your training program.

Plan the scenario: Examine the terrain and choose the lines you wish to use to challenge your dog. Select the location for setting up the launcher, the area of fall for the bumper or Super Bird, and the location of the line from which you and your dog will run the scenario. Consider the effect wind may have on the path of the bumper and the dog's performance.

CAUTION

Inspect the line your dog may run to the area of the fall for holes, hidden ditches or other obstacles that may injure your dog. Be sure there is no vegetation or other obstructions overhanging the location you have selected for the launcher or in the line of flight of the bumper.

Height & Angle Adjustment

You can vary the range from the launcher to the bumper impact point by varying the angle of the firing tubes, by adjusting the Angle Adjustment Rods, varying the position of the bumpers on the firing tubes, by the power of the load (Green, Yellow, Red), or by reducing air friction (by making the streamers smaller).

The optimum angle of the firing tubes is between 55 and 75 degrees from the horizontal. Increasing that angle will cause the bumper to travel higher and shorten the range to bumper impact. Reducing the angle will result in a lower trajectory and increase the range.

The range to the point of impact may also be varied by adjusting the position of the bumper on the firing tube. Maximum range (45 to 50 yards) will be reached by sliding the bumper all the way down the tube. Range will be reduced if the bumper is slid only part way down the tube.

Field Setup Procedure:

Turn the receiver toggle switch to the "on" position.

Slide the bumpers onto the launcher tubes.

Disengage the angle adjustment rod from a launcher tube base.

Rotate the launcher tube 180 degrees so the breech and servo assembly are up and the bumpers are down.

Unlatch the firing assembly and open the breech.

Insert a .22 caliber blank cartridge.

Close the breech.

Rotate the launcher tube to the launch position (bumper up).

Secure the launcher tube base on the angle adjustment rod.

Adjust the angle of the launch tube to meet your scenario, if necessary.

Repeat the loading process with the second launch tube assembly.

If you like, you can test fire without cocking the firing pins.

Move Launcher to Launch Location

Select a flat surface with sparse cover.

Deploy the launcher legs.

Align the firing tubes to orient them to the area of the fall.

Firmly push the launcher legs into the ground to provide a stable launching platform.

FINAL STEP

CAUTION – DANGER!!!

Cock the firing assemblies. Pull down on both cocking handles until you hear a distinct click.

CAUTION

Cocking the firing assemblies is the final step. Extreme caution should be taken, as the unit is loaded and can fire. Never lean over the launcher or be in the line of fire. Never move the unit unless you unload the launcher first (See page 18 – Unloading)

Do not release the cocking handle until you hear the firing pin keyway engaged by the trigger. It will make a distinct click.

Transmitter Operation:

Launch the Bumpers

At the transmitter:



Press the "ARM / ON" key. The red light under the "ARM / ON" key turns on.



Press "SOUND" to direct your dog's attention toward the launcher.



Press "LAUNCH". Hold for one second. The bumper nearest the receiver launches.



Press "LAUNCH" again. The second bumper launches.

NOTE

If more than 45 seconds elapses between activation of any key, the transmitter will revert to a not-armed condition. If the "Armed" light is not on, press "ARM/ON" before attempting to launch the second bumper.

Reloading the Launcher

If both bumpers have been launched:

Open the launcher breech.

Disengage the angle adjustment rods and rotate the launcher tubes 180 degrees.

Remove the expended cartridges.

NOTE

Do not leave expended cartridges in the launcher. Corrosion could damage the launch tube or freeze the cartridge in the breech.

Unloading a Loaded Launcher:

WARNING

Never place your body or body parts in the path of the bumpers or in front of the launching tubes. Serious injury can result if the unit accidentally fires.

Open the breech (Press "Latch" – See Figure 9) "CAUTION"

Push the brass lever pin on the lever arm to release the firing pin. Make sure the Firing Assembly is open so that the firing pin does not hit the shell

Disengage the angle adjustment rod from the firing tube base. Rotate the launcher tubes and bumpers to the breech up position.

Remove the cartridges.

Wet Weather Training

The transmitter and receiver are water resistant and can be used in all weather conditions. If immersed, dry thoroughly before attempting to use the system. During continued water-work, the inside of the Bumper tube should be dry. If the tube is wet, a loss of power may occur. Drying can be accomplished by spinning the Bumper by the power handle and throw rope, by using a drying rack to let the water drain out, or by using a shotgun brush with a cloth or shammy material wrapped around it.

Synchronize the Transmitter (Programming)

Each transmitter has a unique digital code and must be synchronized with the receiver in order to communicate with each other. Programming or synchronizing is used when receiving new equipment or adding features. Though synchronization may already be done at the factory, this process can be accomplished through the following procedure:

At the Launcher

Move the receiver toggle switch to the left (program mode). "Program Mode" light shows green.

At the Transmitter



Press the "PROG" key, then the "SEND/CLEAR" key. This sends the program to the receiver and synchronizes the two units. The



"Program Mode" light on the receiver will go out indicating the program has been accepted.

Bumper Boy Maintenance

Bumper Care

Keep the bumpers clean. Clear accumulated grit and carbon from the bumper barrel with a 12-gauge shotgun soft cleaning tip. DO NOT oil the barrels.

Launcher Care

Keeping the launcher components clean and well lubricated is key to good operation. You should care for your Bumper Boy the same way you would care for a shotgun – cleaning and lubricating. It is very important to keep the Lever and the Firing Pin Assembly well lubricated. We recommend cleaning your Bumper Boy after each use and lubricating weekly, if used every day. We also recommend using Dry Spray Graphite for lubricant.

Graphite can be sprayed into the Firing Pin hole, in the cocked position (as shown on Page 9). This will lubricate the Firing Pin Body and the Lever. The Lever can also be lubricated directly.

Periodically (every three to six months), clean accumulated carbon and grit from the launcher tube barrel with a .22 caliber cleaning rod and cleaning patch. Clean the exterior of the launcher tube. Apply silicone grease to the “O” rings on the launcher tubes monthly. No further maintenance, other than charging the batteries, is required.

Transmitter and Receiver Care

Store in a dry environment. Recharge the batteries after several days of use.

Trouble Shooting Guide

One or both launch assemblies misfired. That is, you attempted to launch but failed to launch one or both bumpers.

Did you arm the transmitter?

This is accomplished by pressing the “ARM/ON” key .



The red light under the “ARM / ON” key indicates that the safety is off and ready to launch/fire.



Press the “LAUNCH” key and hold down positively for one second.



Note: If a key has not been pressed within 45 seconds the transmitter will automatically disarm. To fire/launch, you must re-arm by pressing the “ARM/ON” key.

Is the receiver in the ON position?

- Move the toggle switch to the right. The “ON” light will (Red) appear, then go out.

Are the Firing Pins cocked?

- Check to determine if the unit(s) are cocked (you can see the shiny shaft above the cocking handles).

Sound does not work:

- Press the sound key and check to see if the “Low Batt” warning light comes on (on the receiver). When the receiver detects a low battery condition, it will turn off the sound system. Recharging is required.

Servo operates, but does not fire consistently:

- Lubricate the Firing Assembly using Dry Graphite (See Figure 9).
- Make sure the “Lever bolt & nut” are not too tight.
- Check if the wiring harness has been stressed or pulled out,
- Check servo arm adjustment (does it re-align in the same position as the other servo arm?).

Firing Pin will not cock:

- Lever cannot return because the servo arm is not returning to the correct alignment.
- Lever cannot return because the “Lever bolt & nut” are too tight.
- Lever cannot return because of poor lubrication.

Replacing a Servo:

If a servo motor needs to be replaced, they can be purchased locally – from any hobby store – or directly from Bumper Boy (1-800-729-3822). Servo type is any compatible Futaba 3000 series.

- Score heat shrink, on both sides, at servo connector – located approximately 11 inches back from the servo motor.
- Pull apart wiring harness from connector.
- Remove the four servo mounting screws.
- Remove servo arm.
- Place bracket in position (on new servo).
- Re-install servo arm making sure that the servo is put back in the same position from which it was removed (from the old servo).
- Once the servo arm is in the correct position, re-install the servo arm screw.
- Re-install the four servo mounting screws (Do not put servo washers back on and do not over tighten).
- Plug new servo into wiring harness, put heat shrink on wiring harness, match wiring harness colors (red, white, and black) and press ends together.
- Test servo with the electronics. If servo does not activate, reverse the connector.
- Use hot air gun, blow dryer, or lighter to secure heat shrink

Figure 3. Servo Bracket Assembly Diagram

