TIPPMANN® X7™ E-GRIP™ KIT PART# T210001
INSTALLATION & PROGRAMMING INSTRUCTIONS

KIT PN. T210001 INCLUDES:
❑ 1 - X7™ E-Grip™

NOTE: 9V Battery Not Included, but Required

⚠ WARNING

EYE PROTECTION DESIGNED FOR PAINTBALL USE MUST BE WORN AT ALL TIMES WHEN HANDLING THIS MARKER BY THE USER AND ANY PERSON WITHIN RANGE. DO NOT DISASSEMBLE THIS MARKER WHILE IT IS PRESSURIZED WITH AIR. REMOVE AIR SUPPLY CYLINDER OR CARTRIDGE BEFORE DOING ANY DISASSEMBLY. DISASSEMBLING THE RECEIVER WHILE UNDER AIR PRESSURE CAN CAUSE PERSONAL INJURY &/OR DAMAGE TO THE MARKER. DO NOT OPERATE THIS MARKER WITH PARTS MISSING OR DAMAGED. IF DURING THE COURSE OF THIS INSTALLATION, A PART IS LOST OR FOUND TO BE DAMAGED, OBTAIN A REPLACEMENT PART BEFORE CONTINUING REASSEMBLY.

❑ **READ EACH STEP COMPLETELY BEFORE PERFORMING STEP.**

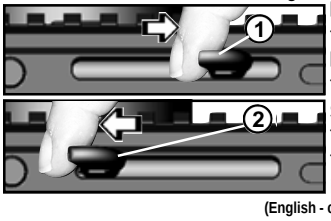
❑ **Set up a table with plenty of space to work.** You will need a 7/16" wrench and a 9 volt battery. NOTE: Carefully hand start threaded parts, do not over tighten and strip threads.

STEP 1: Prepare Marker for SAFE Disassembly before beginning disassembly.

Eye protection designed for paintball use must be worn by the user and any person within range.

1. Unload Your Marker - To unload your marker:
❑ **1)** Install the barrel sleeve. ❑ **2)** Empty and remove the hopper (turn the hopper clockwise and lift out). ❑ **3)** Go to a designated firing area and remove the barrel sleeve. ❑ **4)** Point your marker in a safe direction and fire several times to be sure there are no balls lodged in the chamber and / or barrel.
❑ **5)** Visually inspect the Cyclone™ Feeder and chamber for paintballs.

2. Remove The Air Supply - To remove a charged air supply cylinder:
❑ **1)** Turn the cylinder approximately 3/4 of a turn counterclockwise or out. This allows the air supply pin valve to close so that no air will enter the marker.
❑ **2)** Point the marker in a safe direction and discharge the remaining gas in the marker by pulling the trigger until the marker stops firing. This may take 4-5 shots. If your marker continues to fire the tank pin valve has not closed yet (because of the variances in tank pin valve parts, each tank varies slightly on exactly how far it should be turned) and ❑ you will have to turn the tank counterclockwise a little further and repeat step-2) until the marker does not fire, ❑ then remove the tank.
NOTE: If you turned the tank and it began to leak before you pulled the trigger the tank o-ring should be checked for damage before reassembly.
❑ **3) After air tank is removed,** point & fire the marker in a safe direction until stored air is completely discharged.
❑ **4) Put marker in the uncocked position:**
❑ Pull and hold the bolt cocking handle back ①;



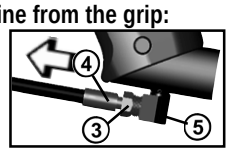
❑ then pull the trigger and ❑ release the handle slowly forward ② to uncock the marker.

(English - continued on page 2)

STEP 2: Remove stock grip from marker.

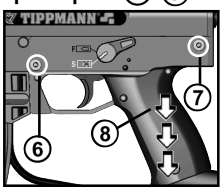
❑ **Do Not perform STEP 2 before reading the warning section and completing STEP 1.**

❑ **1) Remove the gas line from the grip:**
Use a 7/16" wrench to loosen the gas line nut ③ and then pull the gas line ④ out of the gas line elbow ⑤.



❑ **2) Remove the 2 grip push pins ⑥/⑦:**
Press the ends of the 2 push pins in and then pull push pins out.

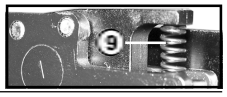
❑ **3) Remove the grip:**
Pull down on the grip ⑧ to slide it off.



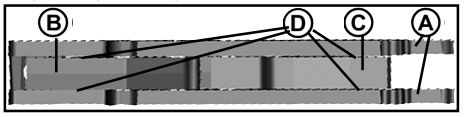
STEP 3: Install the new X7™ E-Grip™.

1). Prepare E-Grip™ for installation:

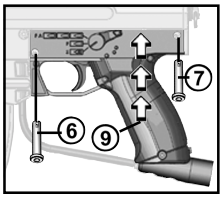
❑ Check to be certain the trigger spring ⑨ is in position as shown.



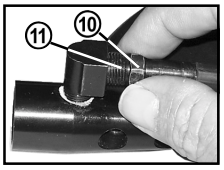
❑ Check to be certain the trigger plates have not separated and the E-Grip™ trigger assembly is intact as shown. If there are gaps at Ⓓ between the trigger plates Ⓐ and the trigger Ⓑ or sear Ⓒ - squeeze plates together to look as shown.



❑ 2). Install the E-Grip™:
❑ Slide the E-Grip™ ⑨ up onto the marker and align the push pin holes.
❑ Insert the two push pins ⑥ & ⑦.



❑ **3) Install the gas line** - Thread tape or paste are not needed for this connection.
❑ Insert the gas line into the E-Grip™ gas line elbow.
❑ Be careful that you do not cross-thread the fitting as you use your fingers to align, start and finger tighten the gas line nut ⑩ several turns onto the gas line elbow ⑪.
Complete tigntening with a 7/16" wrench.



❑ **4) Install the battery** -
❑ Remove the battery door from the back of the new grip by pulling up and back on the tab.
❑ Plug a 9 volt battery into the battery clip.
❑ To keep the battery from rattling once it is in the E-Grip™, turn the battery so the battery clip wires ⑫ hang against the side of the battery, then Insert the battery into the E-Grip™ as shown.
NOTE: When removing a battery from the E-Grip™, Do Not pull the battery out by the wires.

❑ **5) Re-install the battery door -** Replace the battery door with the tab down and listen for the snap as it locks back into the E-Grip™.

Step 4: Power On - Basic Operation

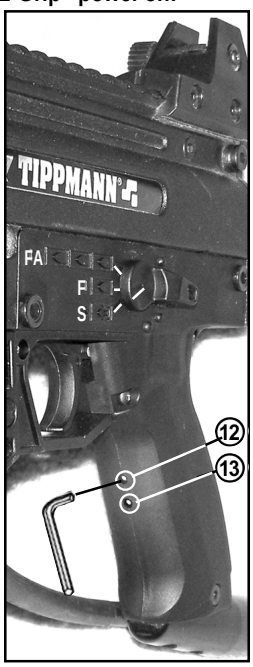
❑ **TOURNAMENT LOCK:** Because the E-Trigger board requires a tool to turn it on and off, no tournament lock is necessary for competition paintball.

❑ **1) To turn the X7™ E-Grip™ power on:**
❑ Use a small object like an allen wrench to press and hold the power button ⑫ for 2 seconds. The LED ⑬ will light orange then green when the electronics have been activated.

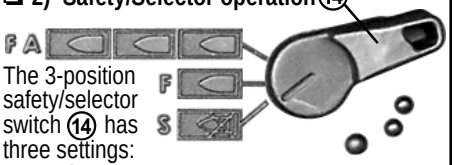
❑ Release the power button and the green LED ⑬ will begin flashing green to show the power is on and the battery is good.

(If LED begins flashing red, see - Low Battery Condition).

NOTE: If pressing the power button failed to turn on the LED light, see *Troubleshooting Section* on page 2.



❑ **2) Safety/Selector operation ⑭**



The 3-position safety/selector switch ⑭ has three settings:
S = Safe ;
F = Semi-Auto (One pull/release of the trigger fires 1 time.
FA = Special Firing Mode. The Special Firing Mode can be set to any 1 of 5 firing options as detailed on page 2 - *Special Firing Mode Options.*
This E-Grip™ is set to the factory default setting: **Safe Full-Auto -** Pulling the trigger three times in less than one second will result in full-automatic firing. Holding the trigger down on the third pull will sustain this full-auto mode. The default rate of fire for this mode is 13 bps.

❑ **3) To fire the marker -** select either the F or FA position using the safety/selector switch and pull the trigger. The LED will light orange with each pull of the trigger.

❑ **4) Turn power off -** To turn the power off, hold the power button for 2 seconds. The LED will change from green to red when the power-off condition has been achieved. (NOTE: The trigger electronics are set to shut-off automatically after a prolonged period of inactivity (120 minutes).

❑ **5) Low battery condition -** The E-Trigger™ Low Battery Indicator Feature: When the battery has begun to lose power and needs replaced, the LED will stop flashing green and begin flashing red. While performance will vary while the LED is flashing red, the E-Grip™ will still function under this condition until the battery has lost power to the point that it will not cycle the marker.

❑ **6) Changing Special Firing Modes -** To change the Special Firing Mode - follow the instructions in the Advanced User Programming Section on page 2.

Advanced User Programming Section

There are several programming options which affect the operation of the Tippmann® X7™ E-Grip™. The Advanced User Programming has been designed to allow users the maximum amount of customization possible for their E-Grip™. There are four menu items in the Advanced User Programming: Dwell, Debounce™, Rate-of-fire, and Special Firing Mode. Read and familiarize yourself with each of these items as they are explained in the following sections.

Menu Items-Dwell, Debounce™, Rate-of-fire, and Special Firing Mode Explained:

This section will discuss the four menu items in detail so that a user will understand fully the purpose and use of each menu item.

Dwell - (Factory Default Value = 8 milli-seconds) The Dwell menu item is used to change the amount of time that power is supplied to the solenoid. The solenoid is the part of the electronics which actually contacts the sear of the marker, allowing it to fire. This setting will directly affect the battery life of the E-Grip™. If this is changed to a value less than 8 milli-seconds, your E-Grip™ battery will last longer, but this may not allow the solenoid enough time to trip the sear properly. If this value is set greater than 8 milli-seconds, the solenoid will have power supplied to it for a longer time, but will reduce the life of the battery. Changing this value can cure or create performance issues for the user. This menu item can only be updated with the values of 2-20 milli-seconds.

Debounce™ - (Factory Default Value = 50 milli-seconds) The Debounce™ menu item is used to change the amount of time between accepted trigger pulls. Quite simply, this adjusts the amount of time from one trigger pull being accepted by the electronics to the next trigger pull which can be accepted. If a Debounce™ setting is too low, a user may shoot more times than they had expected. This can be explained by what is called "Trigger Bounce." When a paintball marker is fired, the marker will move and vibrate in a user's hand. This vibration can allow the trigger to reset itself and trip without the user realizing that their finger has actually moved. NOTE: This menu item can only be updated with the values of 25-65 milli-seconds.

Rate-of-Fire - (Factory Default Value = 13 bps) The Rate-of-Fire menu item may be used to update the Safe Full-auto Firing mode. This is the only Special Firing Mode which is affected by this menu item. All other Special Firing modes cannot have their rate of fire adjusted. This menu item can only be updated with the values of 8-30 bps. Please note that extremely high rates of fire (over 20 bps), paint breakage can occur due to the maximum feed rate of the Tippmann® Cyclone™ Feed System.

Special Firing Mode - (Factory Default Setting = Safe Full-auto) The Special Firing Mode menu is used to select a default Special Firing Option. There are 5 options so this menu item can only accept a value of 1, 2, 3, 4 or 5.
The 5 Special Firing Options are:

- 1 LED Flash = **Safe Three-shot Burst-** Pulling the trigger three times in less than one second will result in a 3-shot burst at a rate of 13 balls per second (bps) on the third trigger pull. Each pull of the trigger in less than one second after this will result in another 3-shot burst.
- 2 LED Flashes = **Safe Full-auto (Factory Default Setting)-** Pulling the trigger three times in less than one second will result in full-automatic firing. Holding the trigger down on the third pull will sustain this full-auto mode. The default rate of fire for this mode is 13 bps.
- 3 LED Flashes = **Auto-Response-** The marker will fire on the pull and the release of the trigger. This mode effectively doubles your manual firing rate.
- 4 LED Flashes = **Turbo Mode-** Pulling the trigger three times in less than one second will result in full-automatic firing at a rate of 15 bps. To sustain this rate of fire, the trigger must be pulled at least once per second.
- 5 LED Flashes = **Semi-automatic-** One pull/release of the trigger fires 1 time. This semi-automatic Special Firing Mode is available for fields or tournaments which restrict the use of automatic firing modes. This mode is the same as selecting the F firing mode with the safety/selector switch.

❑ To identify your current firing option setting: While the X7™ E-Grip™ is powered on, press and hold the power button (12) for a ½ second. The LED (13) will flash orange to indentify the current Special Firing Mode Option and then turn back to green. Repeat and count the number of orange flashes and match that number to the options listing above to identify the current setting.

Step 1: Accessing the Advanced User Programming

❑ **1) Power off -** To begin the Advanced User Programming, make sure the power is off. If the power is on, press and hold the power button for 2 seconds. The LED will change to a solid red color. The E-Grip™ will power down when the power button is released.
❑ **2) Pull the trigger -** Pull and hold the trigger down.
❑ **3) Power on -** Press and hold the power button down for 2 seconds. The E-Grip™ will appear to power on normally. Release the power button once the LED turns green.
❑ **4) Continue holding the trigger -** Continue to hold the trigger down for 5 seconds. After 5 seconds, the LED will change to a solid red color.
❑ **5) Release the trigger -** Once the LED changes to the solid red color, release the trigger. The E-Grip™ is now in the main menu of the Advanced User Programming.

Step 2: Choosing a menu item

The four menu items contained in the Advanced User Programming menu are Dwell, Debounce™, Rate-of-fire, and Special Firing Mode. Each of these menu items has a corresponding color code as follows.
1. Solid Red - Dwell
2. Solid Green - Debounce™
3. Flashing Green - Rate of fire
4. Alternating Red/Green - Special Firing Mode

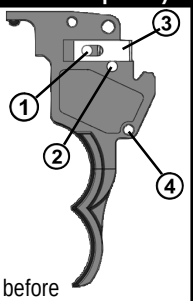
❑ **1) Cycling through the menu -** To cycle through the menu, pull and release the trigger. Each time the trigger is pulled and released, a different color will be displayed on the LED in accordance with the list above.
❑ **2) Enter a menu option -** Once the LED displays the color of the menu item that is needed, pull and hold the trigger for two seconds.
❑ **3) Current Value -** Upon entering a menu item, the LED will begin to flash red. The flashes represent the current menu value. The current value will be flashed twice with a short pause between the number flashes. If a new value is not entered before the end of the second value display, the electronics will automatically return to the main menu.
❑ **4) Enter a new value -** At any time while the menu is flashing the LED in accordance with its current value, a new value can be entered by pulling and releasing the trigger. Each pull and release of the trigger will count as a 1 when entering the new value. Example: To enter a number 5, pull and release the trigger five times. Once the user is done entering the value, release the trigger.
❑ **5) Successfully updated menu confirmation -** Once the user has entered an a new value for a menu item, the LED will flash red/orange/green twice to signify an acceptable value has been entered. The electronics will then return to the main menu. If an unacceptable value has been entered, the LED will quickly flash red and return to the main menu. The value of the menu item will not be updated if this happens.
❑ **6) Power off -** Once a menu item has been changed, the user must power-off the electronics before the change will take effect. Hold the power button for 2 seconds. The LED will change to solid red. Release the power button and the electronics will power off.
❑ **7) Optional: Factory settings reset -** A factory settings reset can be accomplished by pressing and holding the power button for 10 seconds. The board will appear to power on normally, but after 10 seconds, the LED will flash red/orange/green twice, then the board will power-off. All factory settings will be reset at this point.

Troubleshooting

PROBLEM: **The LED light does not light when you push the power button to turn ON the E-Trigger.**
1) Battery must be installed. ❑ Check that battery is installed.
2) Battery may be disconnected. ❑ Check battery clip connection.
3) Battery may be bad. ❑ Check battery, replace if bad.
4) Wire may be disconnected from battery clip - ❑ Inspect wire connections to battery clip.
5) NOTE: If a problem still exists, call Tippmann® Service Department at 1-300-533-4831.

PROBLEM: **Battery life is very short.** ❑ Dwell setting may be too high and you need to reduce the Dwell time - *see details in Dwell Section.*
PROBLEM: **Paint breakage occurs in Full Auto or Safe Full-Auto Modes.**
❑ Current Rate-of-Fire may exceed maximum Cyclone™ Feed Rate and you need to reduce the Rate-of-Fire - *See details in Rate-of-Fire Section*
PROBLEM: **You can hear E-Trigger operating but marker does not fire.**
❑ Check to be sure sufficient air supply is hooked up to the marker.
❑ Dwell setting may be too low and you need to increase the Dwell time - *see details in Dwell Section.*
❑ **PROBLEM**: Marker fires more times than expected. ❑ Debounce™ setting may be to low causing "Trigger Bounce" and you need to increase the Debounce time - *see details in Debounce™ section.*

Double Trigger Kit (Optional, not included with X7™ E-Grip™ Kit)



If installing a double trigger into the E-Grip™, it may be necessary to use the magnet from the single trigger that came with this kit if the double trigger does not have a magnet. Before removing the magnet from your single trigger, be sure to take note of which side of the trigger has the red dot on the magnet. The magnet will need to be inserted into the double trigger in the same orientation into opening (4). The red dot should be visible if the magnet is inserted into the double trigger shown in the orientation of the trigger as shown.
The trigger slider/spring (3) will need to be removed before installing the double trigger into the E-Grip™. This can be accomplished by removing pins (1) and (2) from the double trigger. This will allow the trigger slider and spring to be removed from the trigger.

IMPORTANT: Keep these instructions for future reference.