

TIPPMANN® X7™ E-Grip™ Kit

INSTALLATION & PROGRAMMING INSTRUCTIONS

Kit Part # T210001 Includes:



- X7 E-Grip
- Instruction Sheet
- 9V Battery Not Included, but Required



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 MARKER WHILE UNDER AIR PRESSURE CAN CAUSE PERSONAL INJURY AND/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 THE STEP!

Tip: Set up a table with plenty of space to work. You will need a 7/16" open-ended wrench to complete the installation of this kit.

STEP 1: Prepare Marker for SAFE Disassembly before beginning installation

1) Unload your marker – Eye protection designed for paintball use must be worn by the user and any person within range: first remove and empty the hopper. Then, point your marker in a safe direction and fire several times to ensure there are no balls left in the feeder or lodged in the chamber or barrel.

2) Remove air source – To remove a charged air cylinder, turn the cylinder approximately 3/4 of a turn counterclockwise or out. This allows the tank pin valve to close so that no air will enter the marker. Point the marker in a safe direction and expel the remaining air in the marker by pulling the trigger until the marker stops firing. (This may take 4-5 shots).

*If your marker continues to fire after you have turned the tank 3/4 of a turn, the tank pin valve has not closed yet and you may have to turn the tank counterclockwise a little further.

*If you turn the tank 3/4 of a turn and it begins to leak before you pull the trigger, you have turned it too far and may have damaged the tank o-ring.

3) After air tank is removed – Cock the marker and point the marker in a safe direction and attempt to fire the marker by pulling the trigger. This will expel any air which may still be stored. Repeat this process until all of the air has been removed from the system.

4) Place bolt in the un-cocked position – Hold the bolt cocking handle (Item 1 of Figure 1.) back – then pull the trigger (Item 4 of Figure 1.) and release the cocking handle forward slowly to un-cock the marker.

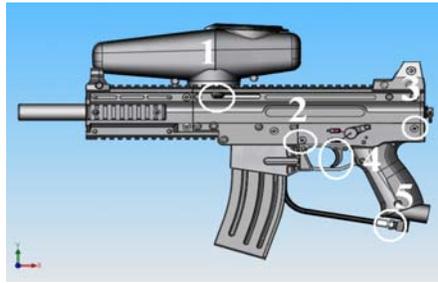


Figure 1.

***NOTE: !! DO NOT PERFORM STEP 2 BEFORE READING THE WARNING SECTION AND COMPLETING STEP 1 FIRST!!**

STEP 2: Removing the stock grip from the marker

1) Remove gas line from grip – Use a 7/16" open-ended wrench to loosen and remove the gas line (Item 5 of Figure 1.) from the inverted flare fitting. Do not remove the elbow from the tank adapter.

2) Remove the grip pushpins – Press on the back of the pushpins (Item 2 and Item 3 of Figure 1.). Pull the pushpins out.

3) Remove the grip – Pull down on the grip to slide it off of the marker.

STEP 3: Installing the new X7™ E-Grip™ onto the marker

1) Prepare grip for installation – Before installing the new E-Grip™, check to ensure that the trigger plates have not separated during transport.

2) Install the grip – Holding the marker with the magazine pointed down, slide the new grip up onto the marker.

3) Replace the pushpins – Align the pushpin holes on the marker and the grip, then insert the pushpins from the side of the marker shown in Figure 2.

4) Re-install the gas line – First, use your fingers to start tightening the gas line fitting into the new flare fitting attached to the grip. This will ensure that you do not cross-thread the fitting. After you finger-tighten the gas-line, use the 7/16" open-ended wrench to tighten the gas line. Thread tape or paste are not needed for this connection.

5) 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 visible battery snap. Twist the battery and allow the battery snap wires to hang onto the side of the battery. Inserting the battery into the grip with the wires beside the battery will ensure the battery does not rattle once it is in the grip.

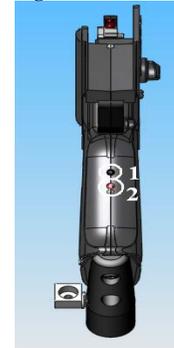
6) Re-install the battery door – Replace the battery door with the tab down and listen for the snap as it locks back into the grip.



Figure 2.

Step 4: Power – on and basic operation

Figure 3.



1) Turn power on – To power on the X7™ E-Grip™, press and hold the power button (Item 1 of Figure 3) for 2 seconds. The LED (Item 2 of Figure 3) will turn from orange to green when the electronics have activated. Release the power button once the LED has turned green. After the electronics have been activated, the LED will flash green.

2) Safety/Selector operation – The three-

position safety/selector switch (Item 4 of Figure 4) has three settings for optimal performance: Safe (S, Item 3 of Figure 4), Semi-Auto (F, Item 2 of Figure 4), and a Special Firing Mode (FA, Item 1 of Figure 4). Special Firing Modes will be discussed in the next section.

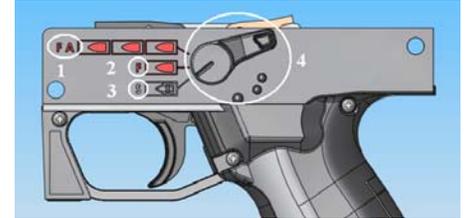


Figure 4.

3) Firing – 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) Changing Special Firing Modes – To change the Special Firing Mode while the X7™ E-Grip™ is powered on, press and hold the power button (Item 1 of Figure 3) for a 1/2 second. The LED will flash orange to represent the number of the Special Firing Mode. The corresponding numbers are listed in the Special Firing Modes section of these instructions. Powering off the X7™ E-Grip™ will reset the Special Firing Mode to the default mode. The default Special Firing Mode can be changed by following the instructions in the Advanced User Programming section.

5) 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.

6) Low battery condition – The LED will stop flashing green and begin flashing red when the battery has begun to lose power. 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. Performance will vary while the LED is flashing red.

Special Firing Modes of the X7™ E-Grip™

The Special Firing Mode of the X7™ E-Grip™ may be programmed to one of five firing options which are listed next.

Special Firing Modes:

1. **Safe Three-round 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. **Safe Full-Auto (factory default)** – 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. **Auto-Response** – The marker will fire on the pull and the release of the trigger. This mode effectively doubles your manual firing rate.
4. **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. **Semi-Auto** – A 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.

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. Each of these items will be explained in the following sections.

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. These color codes are listed below.

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 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.

Menu Item Explanation

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

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.

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 Value = 2 Safe Three-shot burst) The Special Firing Mode menu item is used to change the default Special Firing Mode. The value and corresponding Special Firing Mode are listed below.

1. Safe Three-shot Burst
2. Safe Full-auto
3. Auto-Response
4. Turbo Mode
5. Semi-automatic

This menu item can only be updated with the values of 1-5.

Double Trigger Kit (Optional, not included with the 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 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 (use the pocket noted as Item 4 of Figure 5 for the magnet). The red dot should be visible if the magnet is inserted into the double trigger shown in the orientation of the trigger in Figure 5.

The trigger slider (Item 3 of Figure 5) will need to be removed before installing the double trigger into the E-Grip™. This can be accomplished by removing pins (Items 1 and 2 of Figure 5) from the double trigger. This will allow the trigger slider and trigger slider spring to be removed from the trigger.

