DRAFT- Not for Distribution

SETUP MENU

1. To access the setup menu, press the setup button, located on the board inside the grip frame.
2. The following options will be available. Press the top and bottom buttons to change items, and then press the center button to select.
    A. "TRIG"- Sets values associated with trigger filtering
    B. "TIME"- Sets values associated with pneumatics timing
    C. "BACK"- Exits the menu
3. To change the value of a menu item, use the top and bottom buttons to increase or decrease the value. Press the center button when finished.

TRIG Menu

1. "PULL"- The amount of time the trigger must be pulled to fire a shot.
2. "REL "- The amount of time the trigger must be released before it is pulled to fire a shot.
3. "SBE "- The amount of time from the start of the firing cycle that the shot buffer is enabled. The shot buffer will store one trigger input during the firing cycle, then automatically start another firing cycle as soon as the first is over. This allows the user to easily cycle the gun at its maximum rate. Note: this is still only one shot per trigger pull.
4. "TNS "- Trigger notch start. See section below.
5. "TNE "- Trigger notch end.
6. "TEST"- Displays time between shots with trigger filtering on. Middle button exits. **Warning: The gun will fire while this item is selected!**
7. "DEF "- Set factory defaults for trigger filtering. Useful if you've screwed the values up and can't get it to work.
8. "BACK"- Return to the previous menu.

Note: Values for PULL, REL, and SBE that are too small will cause excessive trigger bounce. This may not be legal at your field.

TIME Menu

1. "VDWL "- Valve dwell. The amount of time the valve solenoid will be turned on during the firing cycle. Typically this will be around 3.75mS.
2. "BON "- The amount of time from the beginning of the firing cycle that the bolt solenoid is turned on.
3. "BDWL" – Bolt dwell. The amount of time the bolt will be turned on during the firing cycle.
4. "BCLO"- The amount of time allowed between cycles for the bolt to close. Typically this value will be fairly small, due to the response time of the hammer.
5. "DEF "- Allows selection of factory defaults. See below for explanation.
6. "BACK"- Return to the previous menu.

TIME – DEF Menu

Factory Defaults.

1. "SLOW"- Stock cocker

2. “MED “- Mildly upgraded cocker. (delrin bolt etc.)
3. “FAST”- All out upgraded cocker. (delrin bolt, QEV’s, light back block, aluminum pump rod)
4. “PBX “- PBX shuttle block cocker. This is the fastest default setting.
5. “BACK”- Return to the previous menu.

DISPLAY

1. Press and release the top button to switch between items to display.
2. Hold the top button for two seconds to turn the gun off. Hold again for 3 seconds to turn on.
3. You can switch between the following items.
    A. Game timer- Press and release the bottom button to start the timer. Press and release the bottom button again to stop the timer. Hold the bottom button for one second to reset.
    B. Shot counter- can display a maximum of 9999. Hold the bottom button for one second to reset.
    C. Battery status- Shows battery voltage. Consider replacing your battery when it gets to 7.5V.
    D. BPS counter- Displays how many times you have fired in the last second. Press and release the bottom button to see max bps. Hold the bottom button for one second to reset the max BPS.
    E. Blank- This is the recommended setting to conserve battery life. The dot will flash twice to indicate the eye is on. One flash indicates the eye is off.

PLAY MENU

1. Hold down the center button for one second to access the play menu.
2. This menu is accessible without tools and only changes settings that do not affect firing of the gun.
3. “LED “- LED display brightness. A value of 0 is the dimmest setting. Keep this value as low as possible to conserve battery life. A value of 2 is a good place to start out.
4. “EYE “- Eye menu. Allows access to the eye settings. See below for details.
5. “GTIM”- Game timer. Set the value that the game counter counts down from. Maximum 60:00.
6. “BACK”- Return to previous menu.

EYE

1. The eye can be toggled on and off by pressing and releasing the center button.
2. Settings for the eye can be accessed through the play menu by holding down the center button for one second. Select the EYE option.
3. “EYE ” Menu
    A. “DEL ”- Eye delay. This is how long the gun waits after detecting a ball before turning off the bolt solenoid. Typically this will be small and will

vary with your type of gun. Experiment to set this value as low as possible.

B. "SENS"- Eye sensitivity. This is the increase in signal level the eye must see before a ball is detected. Keep this as low as possible unless you have a problem with ambient light coming through the feed neck causing false readings. 25-30 is a good number.
C. "ETO "- Eye time out. The bolt will close after this amount of time even if a ball hasn't been detected.
D. "DIAG"- Eye diagnostic. Displays the current eye signal level. This value should change when the bolt is opened or closed or a paint ball is put in the breech. If this value does not change, the eye may be broken. Verify the plug is firmly seated in its socket and the eye is clear of all debris.
E. "DEF "- Set factory defaults.
F. "BACK"- Return to the previous menu.

Setting Up Your Gun

Quick and Easy Timing Setup

1. Set BON
    a. Remove hopper from gun.
    b. Chamber one paintball
    c. Place one paintball into the feedneck
    d. Start the BON value at a high number (10mS or so)
    e. Fire gun in a safe direction and observe blowback
    f. Decrease BON until an increase in blowback is noticed. Then decrease BON to its previous value.
    g. This test must be performed with a ball in the breech at all times to work.
2. Set BCLO
    a. Set TREL to 0. This will put the gun in full auto.
    b. Make sure eye is on.
    c. Make sure there is no paint in the gun.
    d. Hold down trigger to fire two shots. If there is a difference in sound between the first and second shots, BCLO is too low.
    e. Decrease BCLO until you hear a difference between the first and second shots. Increase it to its previous value. It may be a good idea to add a mS or two as a safety margin.
3. BDWL can be whatever value you choose. It only effects the total cycle time and not any critical timing of the gun. It would be a good idea to set this to a high value as a failsafe in case of eye malfunction.
4. A proper procedure for setting VDWL has not been developed yet. We recommend setting the dwell to 3.75 mS and adjusting the velocity with the operating pressure. If you cannot reach velocity, turn up the dwell.

Note: The following method has been proposed but not tested. Increase operating pressure until the pilot starts to leak. Back off pressure to make sure the leak stops.

Adjust dwell until desired velocity is reached. Fine tune with operating pressure. We don’t know exactly how well this method will work. It may increase efficiency over the standard 3.75mS/290psi setting.